



Enerjisa YEKA-9 WPPs, Türkiye

Enerjisa YEKA – WPP – 9 BAP
Framework

PREPARED FOR

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Enerjisa YEKA – WPP – 9 BAP Framework
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ACRONYMS AND ABBREVIATIONS

Name	Description
ABBMMP	Adaptive Bird/Bat Monitoring & Management Plan
AoI	Area of Influence
BAP	Biodiversity Action Plan
BAPF	Biodiversity Action Plan Framework
BMP	Biodiversity Management Plan
BBOP	Biodiversity Offset Design Handbook
BOMP	Biodiversity Offset Management and Monitoring Plan
CBD	Convention on Biological Diversity
CIA	Cumulative Impact Assessment
CH	Critical Habitat
CHA	Critical Habitat Assessment
CLO	Community Liaison Officer
CR	Critical Endangered (species threat status, according to IUCN)
CRM	Collision Risk Modeling
DaoI	Direct Area of Influence
DFC	The U.S. International Development Finance Corporation
EBRD	European Bank for Reconstruction and Development
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
E&S	Environmental and Social
EMS	Environmental Management System
EN	Endangered (species threat status, according to IUCN)
ERM	Environmental Resources Management
EPC	Engineering, Procurement and Construction
ESIA	Environmental and Social Impact Assessment
ESDD	Environmental and Social Due Diligence
ESMS	Environmental and Social Management System

Name	Description
ESPP	Environmental and Social Policy and Procedures
ESRS	European Sustainability Reporting Standards
EU	European Union
EUNIS	European Nature Information System
EUROBATS	Agreement on the Conservation of Populations of European Bats
FT	Fatality Threshold
GDF	General Directorate of Forestry
GDNPNP	General Directorate of Nature Protection and National Parks
GIP	Good International Practice
GIS	Geographic Information System
GN	Guidance Note
GRI	Global Reporting Initiative
IaoI	Indirect Area of Influence
IAS	Invasive Alien Species
IBA	Important Bird Area
IFC	International Finance Corporation
IFI	International Financial Institutions
IPA	Important Plant Area
IUCN	International Union for Conservation of Nature
ISO	International Standard of Organization
HSBC	Hong Kong and Shanghai Banking Corporation
JPM	J.P. Morgan
KBA	Key Biodiversity Area
KfW	Kreditanstalt für Wiederaufbau
KPI	Key Performance Indicator
LAC	Limits of Acceptable Change
LC	Least Concern (species threat status, according to IUCN)
MAF	Ministry of Agriculture and Forestry
M&E	Monitoring and Evaluation
NG	Net Gain (of biodiversity)
NNL	No Net Loss (of biodiversity)
OHL	Overhead Transmission Line
PBR	Potential Biological Removal
PBF	Priority Biodiversity Features
PCFM	Post-Construction Bird and Bat Fatality Monitoring
PS	Performance Standard (IFC)

Name	Description
SER	Society for Ecological Restoration
TNFD	Taskforce on Nature-related Financial Disclosures
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
VECs	Valued Social and Environmental Components
VP	Vantage Point
VU	Vulnerable (species threat status, according to IUCN)
WT	Wind Turbine
WPP	Wind Power Plant
WWF	World Wildlife Fund

1. INTRODUCTION

This Biodiversity Action (Plan) Framework (BA(P)F) has been prepared to assist the Enerjisa YEKA-9 WPPs operated by Enerjisa to comply with the requirements of the International Finance Corporation's (IFC) Performance Standard (PS) 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources. Enerjisa has commissioned ERM Germany to develop and implement this BA(P)F, aimed at bolstering biodiversity conservation measures within the operational footprint of nine wind power plants.

1.1 BACKGROUND

The Enerjisa Yeka Nine Wind Power Plants (WPPs) projects have undergone Environmental and Social Impact Assessment (ESIA) and Critical Habitat Assessment (CHA) studies, conducted by Mott MacDonald. Each WPP has had its ESIA reports prepared and approved by respective lenders. However, due to identified limitations in baseline data during the ESIA studies, supplementary biodiversity field surveys were deemed necessary. Consequently, ongoing comprehensive baseline studies are currently underway for each WPP, spearheaded by specialized teams employing meticulous methodologies. The overarching goal of this Biodiversity Action (Plan) Framework (BAPF) is to establish a robust framework encompassing the analysis of existing ESIA and CHA outputs, as well as the assessment of potential risks and actions taking into consideration ongoing field studies.

1.2 PURPOSE OF THE BAPF

The Biodiversity Action (Plan) Framework (BAPF) is intended to provide a high-level framework document to guide the management of biodiversity risks and impacts for the nine WPPs, in order to support an approach to the management of biodiversity that is aligned with the requirements of IFC PS6 with respect to adaptive management informed by monitoring, the application of the mitigation hierarchy, and to identify and recommend actions that support biodiversity No Net Loss (NNL) and/or Net Gain of biodiversity, as relevant to each WPP.

The BAPF seeks to not only provide actions to manage the identified risks/impacts to biodiversity values presented in the existing Environmental and Social Impact Assessment (ESIA) and Critical Habitat Assessment (CHA) reports, but also to identify what unforeseen risks/impacts and appropriate measures may be necessary where there are information gaps in the current ESIA/CHA that are still being addressed through a field monitoring campaign that was still ongoing at the time of developing the BAPF.

The BA(P)F presents the following:

- definition of relevant legislation, policies and obligations regarding biodiversity;
- an overview of relevant biodiversity values and their importance/sensitivity;
- an overview of the anticipated project impacts on the identified biodiversity values (receptors);
- requirements to meet No Net Loss (NNL) of biodiversity or Net Gain (NG) of biodiversity, where relevant;
- high-level action plan with specific categories of actions (e.g., enabling, management, restoration, monitoring) and associated timeframes;
- framework for monitoring of biodiversity during different project phases;

- clarification of roles and responsibilities for implementing the action plan effectively and delivering the actions set out in the BAPF;
- next steps towards BAPF implementation.

Ultimately, the BAPF will serve as the overarching framework to guide the development of individual Biodiversity Actions Plans (BAPs) for each of the nine WPP.

Information Box 1. What is a BAP?

A Biodiversity Action Plan or BAP is a plan that sets out clear and achievable actions to mitigate impacts and to conserve or enhance biodiversity. It identifies priority biodiversity receptors, key activity/project related risks/impacts and details appropriate management actions that are intentional, achievable and measurable. BAPs ultimately assist companies with delivering on their biodiversity requirements and commitments, by providing an instrument to identify, plan, track and manage key actions related to biodiversity management.

1.3 SCOPE OF THE BAPF

1.3.1 SPATIAL SCOPE

The BAPF includes the nine WPPs owned by Enerjisa and covers the direct footprint of each facility and extends to the Area of Influence (AoI) determined for assessing impacts on biodiversity in the ESIA and the Ecologically Appropriate Areas of Analysis (EAAAs) defined for the assessment of Critical Habitat.

This intends to cover protected areas, internationally recognized areas (as defined in IFC PS6) ecosystems, natural and critical habitats (where relevant) and conservation-important species of flora and fauna.

1.3.2 TEMPORAL SCOPE

The BAPF intends to cover all phases of the WPP projects, including construction, operation and decommissioning.

Note that the BAP is designed to be a 'living document' that will be regularly reviewed and updated as the Projects develop, in line with an adaptive management approach that focuses on long-term monitoring to inform the implementation of biodiversity management actions.

1.4 APPROACH

The approach taken to developing the BAPF was as follows:

Step 1: Understanding the Site Context, Biodiversity Baseline and Impacts

- The existing information regarding biodiversity for each WPP was reviewed (i.e. ESIA reports, Critical Habitat Assessment, Monitoring Programs) and summarized to provide an indication of the location of each EPP in relation to protected areas, internationally recognized areas, modified, natural and critical habitat, vegetation, flora, and fauna species.
- The importance/sensitivity of these biodiversity values and the estimated risks/impacts of the WPPs on these values was also summarized from the existing information.
- Where necessary, global datasets on protected areas and habitat types were used to interpret the existing information where necessary. *Importantly, no new primary information was generated.*

Step 2: Linking Biodiversity Values and Risks/Impacts to Management Actions

- Once the baseline and impacts had been contextualized in Step 1, key actions to manage biodiversity risks/impacts were identified and formulated for each component of biodiversity (i.e. ecosystem, habitats, species).
- Strategy for biodiversity management developed to ensure alignment of key actions with the requirements for managing biodiversity described in IFC PS6, including alignment with the 'mitigation hierarchy' and an 'adaptive management' approach.

The approach is also illustrated in the diagram in Figure 1-1, below.

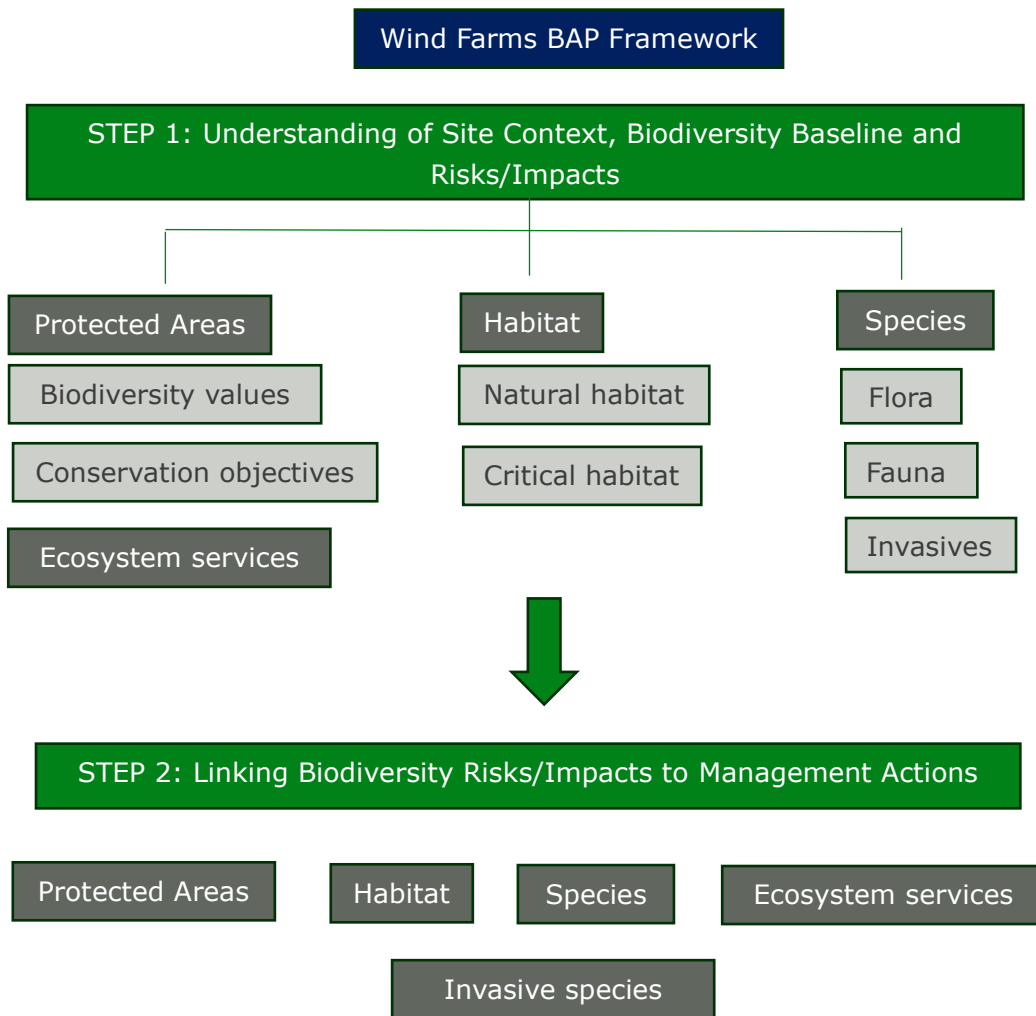


FIGURE 1-1 APPROACH TO THE BAPF

1.5 ASSUMPTIONS, LIMITATIONS AND DATA GAPS

The following key assumptions, limitations and information/data gaps are relevant to the BAPF developed:

- BAPF preparation was limited to desk-based tasks, excluding any site visits, stakeholder engagement or meetings.
- The BAPF is designed to be relatively high-level in terms of the management actions and measures recommended and is intended to provide the framework from which individual BAPs for each WPP project will be developed further.
- Detailed mitigation measures for the various project phases (construction, operation, decommissioning) would be reflected in comprehensive and site-specific Biodiversity Management Plans (BMPs) that includes monitoring. Whilst the BAPF advises on the basic content and timing of the BMP, it does not serve to provide the detailed measures to be implemented and serves more as a high-level guide to inform the development of an appropriate BMP.
- ERM has relied heavily on existing information and data contained in ESIA reports and CHA reports prepared by an external consultant (Mot Macdonald). ERM cannot be held responsible for the validity/correctness of the information contained in any of the external/third party reports used to inform the BAPF, and ERM has not conducted a detailed gap analysis on the existing documentation in the form of an ESDD (Environmental and Social Due Diligence) assessment or similar process.
- Where information/data gaps in the existing documentation (ESIA, CHA) were identified whilst reviewing these reports, ERM has included a justification for further actions required to address these gaps where they have a bearing on biodiversity management, as part of the action plan contained in this BAPF. Note that ERM has not undertaken a detailed gap analysis on the ESIA/CHA approach, methodology or correctness of technical components aligned with good practice, with information gaps identified being restricted to those concerning the comprehensiveness of the baseline data and the presence/absence of necessary assessments (such as collision risk modeling for birds) necessary to effectively understand and manage biodiversity risks/impacts.
- Enerjisa has commissioned several additional (supplementary surveys) of habitats, flora and fauna, to improve the biodiversity baseline for each WPP, and it is understood that the findings of these surveys will be used to update the ESIA reports, and where necessary, the BAPF in future. Several of the proposed actions in the BAPF are therefore considered 'uncertain' as to their relevance to several of the WPPs where surveys are ongoing, and as such should be considered 'preliminary'. These actions should be reviewed and updated as necessary at a point in the future once the field surveys have been completed and ESIA's updated accordingly.
- Where necessary, global datasets on protected areas and habitat types were used to interpret the existing information contained in the ESIA's prepared by external consultants/third parties. *Importantly, no new primary information regarding the biodiversity baseline or assessment of risks/impacts was generated during the BAPF compilation.*
- ERM did undertake any analysis towards the quantification of natural/critical habitat loss due to the WPP projects as part of this BAPF preparation, and it is acknowledged that

this is a crucial next step for Enerjisa towards understanding their liabilities and responsibilities in terms of meeting No Net Loss / Net Gain requirements for the loss of natural/critical habitat in terms of the IFC PS6 provisions. This is a key action reflected in the BAPF.

1.6 KEY DEFINITIONS

Protected area:

Legally protected areas meet the IUCN definition: “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.” This includes areas proposed by governments for such designation (IFC, 2012).

Internationally recognized areas:

Areas exclusively defined in terms of IFC PS6 as UNESCO Natural World Heritage Sites, UNESCO Man and the Biosphere Reserves, Key Biodiversity Areas, and wetlands designated under the Convention on Wetlands of International Importance (the Ramsar Convention) (IFC, 2012).

Key Biodiversity Area (KBA):

KBAs are areas of global conservation importance considered vital to the overall health of our planet and the persistence of biodiversity. They typically support critical populations of threatened species. KBAs are identified based on certain criteria, aimed at ensuring the global population of a species is assessed and the most important populations for that species are identified, including maintaining the genetic variation needed to adapt to a changing planet. The vision of the KBA Programme is “a comprehensive network of sites that contribute significantly to the global persistence of biodiversity is appropriately identified, correctly documented, effectively managed, sufficiently resourced and adequately safeguarded” (Source of information: KBA Programme at <https://www.keybiodiversityareas.org/about-kbas/>).

International Bird and Biodiversity Area (IBA):

IBAs are areas identified using an internationally agreed set of criteria as being globally important for the conservation of bird populations. This network of sites is not only vital to the long-term viability of bird populations but is also important for other forms of wildlife, including animals and plants. Note that all existing IBAs also qualify as KBAs. (Source of information: BirdLife International at <https://www.birdlife.org/projects/ibas-mapping-most-important-places/>).

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 habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered¹ species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes (IFC, 2012).

Ecosystem services:

An ecosystem service is any positive benefit that nature provides to people. These are essentially direct and indirect contributions that natural ecosystems (known as natural capital) provide for human well-being and quality of life. This can be in a practical sense through providing food and water and regulating climate, as well as less tangible cultural aspects such as providing spaces for recreation to reduce stress. *What is important to acknowledge is that underpinning all these services is biodiversity (nature).*

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).

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 or impacts on biodiversity are balanced by the 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 (e.g., local, landscape-level, national, regional) (IFC PS6, 2012).

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 are additional conservation outcomes that can be achieved for the biodiversity values for which critical habitat was designated. Net gains may be achieved through the development of a biodiversity offset and/or, in instances where the client could meet the requirements of

¹ As listed on the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species. The determination of critical habitat based on other listings is as follows: (i) If the species is listed nationally / regionally as critically endangered or endangered, in countries that have adhered to IUCN guidance, the critical habitat determination will be made on a project by project basis in consultation with competent professionals; and (ii) in instances where nationally or regionally listed species' categorizations do not correspond well to those of the IUCN (e.g., some countries more generally list species as "protected" or "restricted"), an assessment will be conducted to determine the rationale and purpose of the listing. In this case, the critical habitat determination will be based on such an assessment.

PR6 / PS6 without a biodiversity offset, the client should achieve net gains through the implementation of programs that could be implemented in situ (on-the-ground) to enhance habitat and protect and conserve biodiversity (IFC, 2012).

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:

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.

2. PROJECT DESCRIPTION

The Project consists of nine sub-projects (Wind Power Plants, WPPs):

- Harmancik WPP (under construction)
- Armutçuk WPP (construction to start shortly)
- Kestanederesi WPP (under construction)
- Ovacik WPP (under construction)
- Dampinar WPP
- Akköy WPP (already operational)
- Hacıdırlar WPP
- Ihlamur WPP
- Uygur WPP (under construction)

The locations of the WPPs in western Türkiye are indicated on the map in Figure 2-1, with further information in Table 2-1 to the WPP locations, existing documentation available and operational status. Eight of the nine WPPs are not yet constructed or operational, with only Akköy WPP being in operation.

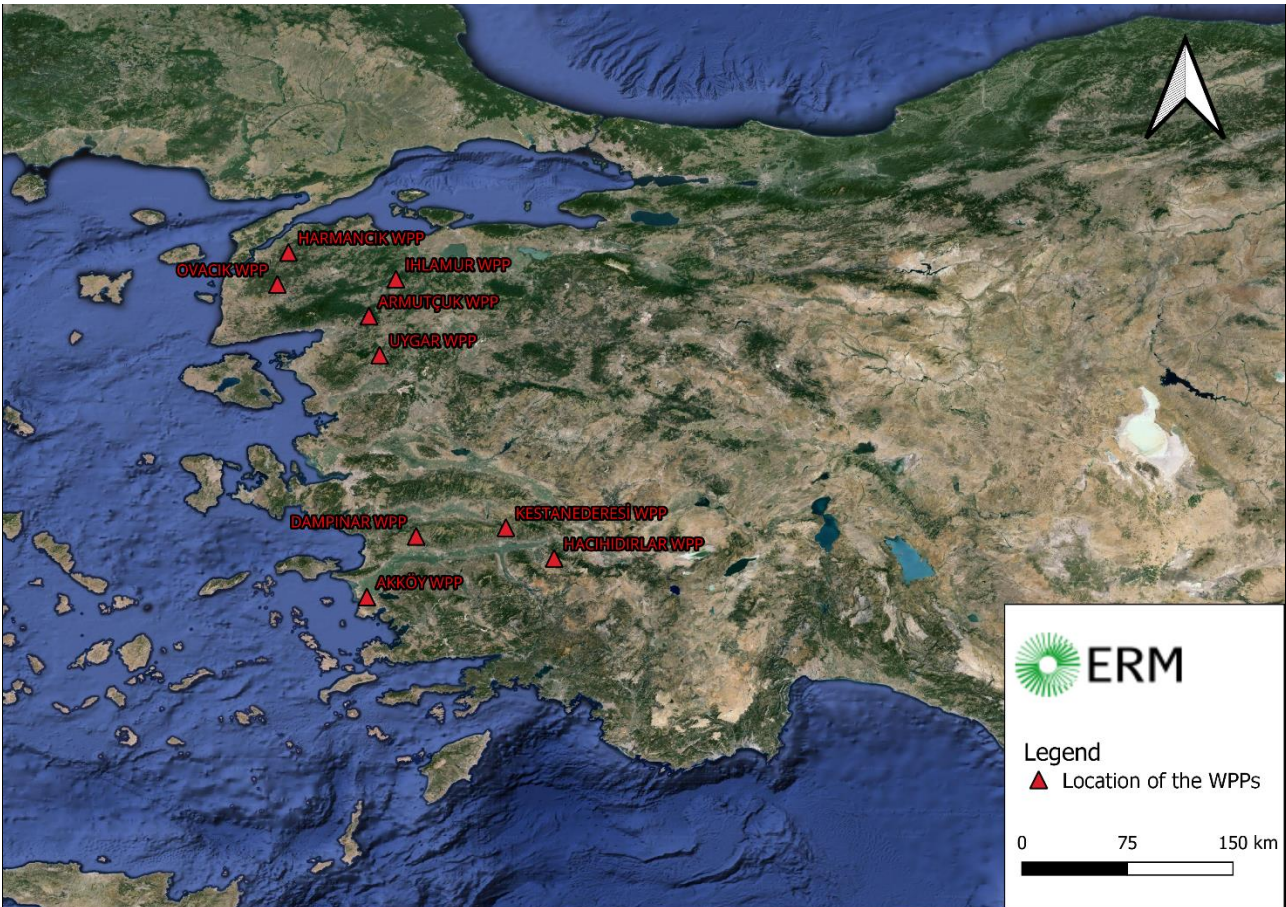


FIGURE 2-1 WPP PROJECT LOCATIONS

TABLE 2-1 WPP PROJECT INFORMATION

Project Name	Location	Existing documentation	Status
Harmancik WPP	Çanakkale	ESIA (Environmental and Social Impact Assessment) and Critical Habitat Assessment (CHA)	Not yet operational: construction works ongoing
Armutcuk WPP	Çanakkale Balıkesir	ESIA and CHA	Not yet operational: construction works starting shortly
Kestanederesi WPP	Aydın Manisa İzmir	ESIA and CHA	Not yet operational: construction works ongoing
Ovacik WPP	Çanakkale	ESIA and CHA	Not yet operational: construction works ongoing
Dampinar WPP	İzmir Aydın	ESIA and CHA	Not yet operational: construction not started
Akköy WPP	Aydın	ESIA and CHA	Operational
Hacıhıdırlar WPP	Aydın Denizli	ESIA and CHA	Not yet operational: construction not started
Ihlamur WPP	Çanakkale Balıkesir	ESIA and CHA	Not yet operational: construction not started
Uygur WPP	Balıkesir İzmir Manisa	ESIA and CHA	Not yet operational: construction works ongoing

3. RELEVANT STANDARDS AND GUIDELINES

The Project, which will be realized using the planned financing provided by a group of development finance institutions and commercial lenders, jointly "Project Lenders" and with partial coverage by the German ECA Euler Hermes Aktiengesellschaft ("EH"). The Project Company intends to develop the Project in alignment with the policy and requirements of the Lenders (Mott MacDonald, Kestanederesi ESIA Report, 2024). DFC ESPP adopts, as a standard for the environmental and social review process, the International Finance Corporation's (IFC) Performance Standards on Social and Environmental Sustainability (Performance Standards), and the World Bank Group Environmental, Health and Safety (EHS) Guidelines. The BAPF is produced in accordance with: IFC PS6 and Turkish law, as described below.

Several guidelines that are regarded as 'good international practice' (GIP) are also relevant and included below (Section 3.6).

3.1 BACKGROUND TURKISH ENVIRONMENTAL LAW (NO: 2872)

This law, that came into force in 1983, is Türkiye's primary framework for environmental legislation and is supported by a series of regulations that have been developed in line with

national and international initiative and standards, and some of them have been revised recently to be harmonized with the European Union (EU) Directives in the scope of pre-accession efforts of Türkiye.

3.2 DFC ENVIRONMENTAL AND SOCIAL POLICY AND PROCEDURES (ESPP)

The U.S. International Development Finance Corporation ('DFC') serves as America's development financial institution. DFC invests across sectors including energy, healthcare, critical infrastructure, and technology projects.

The DFC guiding environmental and social policies and methods are based largely on environmental and social impact evaluation methods connected by organizations such as the World Bank Group, the European Bank for Reconstruction and Development (EBRD), the Inter-American Development Bank, and the U.S. Export Import Bank, among others. DFC's Environmental and Social Performance Policy (ESPP) mandates compliance with national environmental and social regulations by borrowers. DFC's ESPP (2020) aligns well with the International Finance Corporation's (IFC) 2012 Performance Standards (PS) described above.

DFC has established protocols to assess potential adverse environmental and social impacts of proposed projects. This screening process aims to detect any risks at the earliest stage possible. It also serves to identify projects that fall under the category of Categorically Prohibited Projects. DFC is categorically prohibited from supporting activities that may have an irremediable impact on the environment, an adverse impact on the economy or employment, or an adverse impact on public health and safety. Projects listed in Appendix B of the DFC ESPP (2020) under Categorically Prohibited Projects are subject to this restriction. These include, among others:

- Construction of dams that meet certain criteria regarding impact on the environment and people;
- Illegal production and trade;
- Resettlement of 5000 people or more;
- Impact on World Heritage Sites (subject to certain conditions, as per below for protected areas);
- Impacts on United Nations List of National Parks and Protected Areas (unless it can be demonstrated through an environmental assessment that the project:
 - will not result in the degradation of the protected area; and
 - will produce positive environmental and social benefits.

3.3 IFC PERFORMANCE STANDARDS

The DFC's ESPP implements applicable E&S requirements and procedures in accordance with the IFC PS and makes mention that project must meet the requirements of the IFC PS.

3.3.1 PERFORMANCE STANDARD 1 (ASSESSMENT AND MANAGEMENT OF ENVIRONMENTAL AND SOCIAL RISK AND IMPACTS)

IFC Performance Standard (PS) 1 aims to identify and assess environmental (including biodiversity) and social risks and impacts of any given project. The project must adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize, and

where residual impacts remain, compensate/offset for risks and impacts to workers, affected communities and the environment. PS1 promotes improved environmental and social performance of clients through the effective use of management systems. Furthermore, the standard promotes and provides a means for adequate engagement with Affected Communities throughout the project life cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.

3.3.2 PERFORMANCE STANDARD 6 (BIODIVERSITY CONSERVATION AND SUSTAINABLE MANAGEMENT OF LIVING NATURAL RESOURCES)

PS 6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living and natural resources are fundamental to sustainable development. A Biodiversity Action Plan (BAP) is required for projects located in critical habitat and it is recommended for high-risk projects in natural habitats.

To inform the BAPF, the requirements of IFC PS6 that pertain to the management of specific components and aspects of biodiversity (namely protected areas, natural habitat, critical habitat, priority biodiversity features, ecosystem services and invasive alien species) are most relevant, and these are summarized below in Table 3-1 and discussed individually in more detail below.

TABLE 3-1 SUMMARY OF IFC PS6 REQUIREMENTS FOR MANAGING BIODIVERSITY

Aspect of Biodiversity	IFC PS6 requirements
Protected Areas / Internationally Recognized Areas	<ul style="list-style-type: none"> • Requirements of paragraphs 13 – 19 of IFC PS6 to be met, as applicable (pertaining to the management of natural and critical habitat). • Development 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. • Promote and enhance conservation aims and effective management of the protected area.
Natural Habitat	<ul style="list-style-type: none"> • No significant conversion or degradation unless: <ul style="list-style-type: none"> ○ No other alternatives, ○ Consultation with stakeholders has taken place, ○ Mitigation implemented according to the mitigation hierarchy. • Mitigation to achieve NNL where feasible through appropriate actions aligned with the mitigation hierarchy, such: as avoidance, minimization of habitat fragmentation, restoration of habitat and biodiversity offsets.
Critical Habitat (CH)	<ul style="list-style-type: none"> • No activities to take place in areas of critical habitat unless: <ul style="list-style-type: none"> ○ No other alternatives in areas that are not critical habitat, ○ No measurable adverse impacts on critical habitat values and supporting processes; ○ No net reduction in population of CR/EN species; ○ Appropriate long-term biodiversity monitoring and evaluation program to form part of ESMS. • Mitigation strategy to be described in a Biodiversity Action Plan (BAP) designed to achieve NG (Net Gain) of biodiversity. • Where offsets are proposed, demonstrate that significant residual impacts will be adequately mitigated.
Ecosystem Services	<ul style="list-style-type: none"> • Adverse impacts to be avoided. • Where unavoidable, implement mitigation measures that aim to maintain the value and functionality of priority services.

Aspect of Biodiversity	IFC PS6 requirements
	<ul style="list-style-type: none"> Where impacts on priority ecosystem services are identified, minimize impacts and implement measures that increase resource efficiency.
Invasive Alien Species (IAS)	<ul style="list-style-type: none"> No intentional introduction of IAS. Identify and assess risks and determine mitigation options. Control spread of established IAS. Eradicate established IAS from natural habitats where possible and where the client has management control.

3.3.2.1 REQUIREMENTS FOR PROTECTED AREAS AND INTERNATIONALLY RECOGNIZED AREAS

IFC PS6 stipulates certain requirements pertaining to development within or near legally protected areas or internationally recognized areas, or that have the potential to negatively affect such areas:

Para 20. In circumstances where a proposed project is located within a legally protected area or an internationally recognized area, the client will meet the requirements of paragraphs 13 through 19 of this Performance Standard, as applicable. In addition, the client will:

- Demonstrate that the proposed development in such areas is legally permitted;*
- Act in a manner consistent with any government recognized management plans for such areas;*
- Consult protected area sponsors and managers, Affected Communities, Indigenous Peoples and other stakeholders on the proposed project, as appropriate; and Implement additional programs, as appropriate, to promote and enhance the conservation aims and effective management of the area.*

3.3.2.2 REQUIREMENTS FOR NATURAL HABITAT

Ensuring No Net Loss (NNL) of natural habitat in the project area, in line with the IFC PS6 requirements, shall include avoidance of natural habitat loss/conversion or degradation, implementing mitigation measures to minimize habitat fragmentation, restoring habitats and implementing compensation measures such as biodiversity offsets as a last resort measure after considering all other options first. This is in alignment with the mitigation hierarchy:

Para 14. The client will not significantly convert or degrade natural habitats, unless all of the following are demonstrated:

- No other viable alternatives within the region exist for development of the project on modified habitat;*
- Consultation has established the views of stakeholders, including Affected Communities, with respect to the extent of conversion and degradation; and*
- Any conversion or degradation is mitigated according to the mitigation hierarchy.*

Para 15. In areas of natural habitat, mitigation measures will be designed to achieve no net loss of biodiversity where feasible.

Appropriate actions include:

- Avoiding impacts on biodiversity through the identification and protection of set-asides;*
- Implementing measures to minimize habitat fragmentation, such as biological corridors;*
- Restoring habitats during operations and/or after operations; and*
- Implementing biodiversity offsets.*

3.3.2.3 REQUIREMENTS FOR CRITICAL HABITAT

For development located within and/or potentially affecting critical habitat, IFC PS6 generally requires that Net Gain (NG) of biodiversity be considered as the primary objective for mitigating impacts to critical habitat values:

Para 17. In areas of critical habitat, the client will not implement any project activities unless all of the following are demonstrated:

- *No other viable alternatives within the region exist for development of the project on modified or natural habitats that are not critical;*
- *The project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values;*
- *The project does not lead to a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time; and*
- *A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management program.*

Para 18. In such cases where a client is able to meet the requirements defined in paragraph 17, the project's mitigation strategy will be described in a Biodiversity Action Plan and will be designed to achieve net gains of those biodiversity values for which the critical habitat was designated.

Para 19. In instances where biodiversity offsets are proposed as part of the mitigation strategy, the client must demonstrate through an assessment that the project's significant residual impacts on biodiversity will be adequately mitigated to meet the requirements of paragraph 17.

3.3.2.4 REQUIREMENTS FOR ECOSYSTEM SERVICES

IFC PS6 requires that impacts to ecosystem services be assessed and managed appropriately, through measures aligned with the mitigation hierarchy: to avoid, minimize and/or restore biodiversity and related ecosystem services as appropriate:

Para 24. Where a project is likely to adversely impact ecosystem services, as determined by the risks and impacts identification process, the client will conduct a systematic review to identify priority ecosystem services. Priority ecosystem services are two-fold: (i) those services on which project operations are most likely to have an impact and, therefore, which result in adverse impacts to Affected Communities; and/or (ii) those services on which the project is directly dependent for its operations (e.g., water). When Affected Communities are likely to be impacted, they should participate in the determination of priority ecosystem services in accordance with the stakeholder engagement process as defined in Performance Standard 1.

Para 25. With respect to impacts on priority ecosystem services of relevance to Affected Communities and where the client has direct management control or significant influence over such ecosystem services, adverse impacts should be avoided. If these impacts are unavoidable, the client will minimize them and implement mitigation measures that aim to maintain the value and functionality of priority services. With respect to impacts on priority ecosystem services on which the project depends, clients should minimize impacts on ecosystem services and implement measures that increase resource efficiency of their operations, as described in Performance Standard 3. Additional provisions for ecosystem services are included in Performance Standards 4, 5, 7, and 8.19.

3.3.2.5 REQUIREMENTS FOR INVASIVE ALIEN SPECIES

Both IFC PS6 defines also certain management requirements for managing the risk and impact of introducing/spreading Invasive alien Species (IAS) of flora and/or fauna:

22. The client will not intentionally introduce any new alien species (not currently established in the country or region of the project) unless this is carried out in accordance with the existing regulatory framework for such introduction. Notwithstanding the above, the client will not deliberately introduce any alien species with a high risk of invasive behavior regardless of whether such introductions are permitted under the existing regulatory framework. All introductions of alien species will be subject to a risk assessment (as part of the client's environmental and social risks and impacts identification process) to determine the potential

for invasive behavior. The client will implement measures to avoid the potential for accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbor alien species.

23. Where alien species are already established in the country or region of the proposed project, the client will exercise diligence in not spreading them into areas in which they have not already been established. As practicable, the client should take measures to eradicate such species from the natural habitats over which they have management control.

3.4 WORLD BANK EHS

The DFC's ESPP is aligned also with the Environmental, Health, and Safety (EHS) General Guidelines of the World Bank Group.

The World Bank's EHS General Guidelines provide a comprehensive framework for managing environmental and social risks associated with projects funded by the bank and covering numerous sectors, including the energy sector. The guidelines aim to promote sustainable development by integrating environmental, health, and safety considerations into project planning, implementation, and monitoring. Key aspects include assessing potential environmental and social impacts, implementing measures to mitigate risks, ensuring compliance with relevant regulations and standards, and promoting stakeholder engagement and participation. The guidelines emphasize the importance of conducting thorough assessments, monitoring performance, and continuously improving practices to achieve positive environmental and social outcomes while minimizing adverse impacts. The World Bank's Environmental, Health, and Safety (EHS) General Guidelines for wind energy projects emphasize the importance of biodiversity conservation and management.

3.5 OTHER

3.5.1 CONVENTION ON BIOLOGICAL DIVERSITY

The UNEP Convention on Biological Diversity (CBD) entered into force on 29 December 1993. It has three main objectives:

- The conservation of biological diversity.
- The sustainable use of the components of biological diversity.
- The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

Türkiye has been a Party to CBD since 1992. The Ministry of Agriculture and Forestry Natural Resources and Environment established Turkish National Biodiversity Action Plan for the period 2018-2028. The document identifies objectives, actions and monitoring mechanisms for the conservation and sustainable use of biodiversity in accordance with developments in the new period, such as:

- Identify the pressures and threats on biodiversity and ecosystems and reduce them to the possible lowest level or to remove them totally;
- Biological diversity components (ecosystem, species and genetic variability) will be determined, monitored, and species specific and ecosystem based conservation approaches (traditional and modern) will be developed by determining current condition of biodiversity;

- Conservation and sustainable management of biodiversity of areas exposed to agriculture, forestry and fishing activities in the country will be ensured;
- Awareness of the public and administrators on ecosystem services will be raised, benefits from ecosystem services will be increased and sustainable biodiversity management will be ensured;
- Rehabilitation and restoration of ecosystems damaged due to different reasons will be ensured, measures to prevent damage to healthy ecosystems will be developed and legislative gaps thereon will be fulfilled;
- In order to develop high added value products based on knowledge and technology concerning conservation and sustainable use of biological resources, coordination mechanism among universities, public and private sectors will be established, and long-term plans and programs will be prepared; and
- National legislation will be prepared considering the international conventions on access to genetic resources and fair and equitable sharing of the benefits arising from their utilization, and the necessary technical infrastructure will be established.

3.6 RELEVANT GUIDELINES

Several guidelines that are regarded as 'good international practice' (GIP) are also relevant to the BAPF and are described briefly below.

3.6.1 BIRD AND BAT MONITORING/SURVEYS

Bird surveys and bat surveys are essential tools for monitoring the impacts of wind farms on bird and bat populations, ensuring regulatory compliance, informing conservation measures, and promoting sustainable wind energy development.

The guidelines published by NatureScot concerning "*Recommended bird survey methods to inform impact assessment of onshore wind farms*" (NatureScot, 2017) are widely as international good practice when it comes to survey design, planning and implementation of bird monitoring required during baseline data collection to inform wind farm pre-construction impact assessment and operation.

EUROBATS provides guidelines and recommendations ('Guidelines for consideration of bats in wind farm projects' – Rodriguez et al., 2014)) for conducting bat surveys and monitoring around wind farms to assess the potential impacts of turbines on bat populations. The EUROBATS guidelines are considered good international practice, and particularly for application in Europe and neighboring states. These guidelines help ensure that bat surveys are conducted using standardized protocols, allowing for consistent data collection and comparability across different sites and regions.

3.6.2 COLLISION RISK MODELLING

Collision risk modeling is a crucial component of assessing and mitigating potential impacts on avian species posed by wind energy development, particularly within wind farm installations.

NatureScot (formerly Scottish Natural Heritage) has developed guidelines on calculating theoretical collision risk for birds (with and without avoidance by birds) (Scottish Natural Heritage, 2000). This guidance is broadly accepted as good practice internationally.

3.6.3 POST-CONSTRUCTION BIRD/BAT MONITORING

Identifying and quantifying bird and bat fatalities allows for the development and implementation of effective mitigation measures. By understanding which species are most affected and under what circumstances, appropriate strategies can be devised to minimize collisions and mitigate adverse impacts on avian and bat populations.

The 'Good Practice Handbook and Decision Support Tool' covering Post-construction Bird and Bat Fatality Monitoring for Onshore Wind Energy Facilities in Emerging Market Countries (IFC, EBRD and KfW, 2023) was developed and published recently in 2023 by a consortium with International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD) and Kreditanstalt für Wiederaufbau (KfW). This handbook is considered emerging good practice internationally for Post-Construction Bird and Bat Fatality Monitoring (PCFM) and serves as a useful resource for planning and implementing fatality monitoring for birds and bats at operational wind farms, advocating for the use of standardized tools and methodologies.

3.6.4 HABITAT RESTORATION

The Society for Ecological Restoration (SER) has published 'International principles and standards for the practice of ecological restoration', which provides the most comprehensive and robust international framework available to date for ecological restoration projects. These are contained within the publication of the SER (Gann *et al.*, 2019) which can be accessed online from the SER website: <https://www.ser.org/page/SERStandards/International-Standards-for-the-Practice-of-Ecological-Restoration.htm>

The SER guidelines are Intended to support the development of ecological restoration plans, assist implementers with achieving intended goals, while addressing key challenges and navigating trade-offs associated with land management priorities and decisions. At the core of the guidelines, the SER establishes a set of principles that underpin ecological restoration, which serve as a useful guide when designing restoration plans or strategies that consider biodiversity, including:

- Engage stakeholders;
- Draw on many types of knowledge;
- Informed by native reference ecosystems, while consulting environmental change;
- Support ecosystem recovery processes;
- Assessed against clear goals and objectives using measurable indicators;
- Seek the highest level of recovery possible;
- Part of a continuum of restorative activities; and
- Gains cumulative value when applied at large scales.

3.6.5 BIODIVERSITY OFFSETS

In the absence of a national biodiversity offset policy in Türkiye, it is recommended that good international practice be considered when planning/implementing biodiversity offsets as far as possible, particularly the principles, guidelines and methodology contained in the 'Biodiversity Offset Design Handbook' (BBOP, 2012²) which are considered GIP. These include in summary:

² BBOP. 2012. "Guidance Notes to the Standard on Biodiversity Offsets." Washington, D.C.: Business and Biodiversity Offsets Program (BBOP). Online at: <https://www.forest-trends.org/publications/standard-on-biodiversity-offsets/>

- Offsets should be 'like-for-like' with trading only permitted within the same land class type;
- if 'like-for-like' is not possible, offsets should address the same features and habitats within the broader landscape area;
- environmental contributions for specific programs can be used to substitute for the direct management of biodiversity;
- incremental loss and fragmentation of biodiversity values is to be avoided;
- management of offset sites can be used to improve biodiversity values however this may not replace actions that are already funded;
- areas with existing or potential land uses that are likely to be in conflict with the objectives of biodiversity offsets will need to be avoided (mining, forestry leases);
- offsets to be located in close proximity to the impacted area as possible, such that the gains of offset mitigation are retained in the local area impacted and not transferred elsewhere;
- location of offsets in the landscape that facilitate connectivity with adjacent habitats are considered preferable;
- large offset sites that are connected to existing protected areas are also seen as preferable;
- sites similarly used by comparable ethnic groups sharing similar cultural values will be of preference;
- fairness and equity should be ensured for affected stakeholders; and
- offsets chosen should be permanent and ongoing in perpetuity.

3.6.6 IMPACT MITIGATION PLANNING

The following guidelines are considered GIP in management and mitigation planning and supported by the IFC:

- 'Good Practices for Biodiversity Inclusive Impact Assessment and Management Planning' (Hardner *et al.*, 2015);
- 'Mitigating biodiversity impacts associated with solar and wind energy development: Guidelines for project developers' (Bennun *et al.*, 2021); and
- Various guidelines developed by NatureScot pertaining to the assessment and management/mitigation of impacts to birds and bats at wind farms, which can be found on their website: <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/renewable-energy/onshore-wind-energy>

4. SUMMARY OF BIODIVERSITY BASELINE AND IMPACTS

Summaries of the biodiversity baseline and risk/impact assessment information contained in the ESIA and CHA reports for the various WPPs are included below. These individual summaries per WPP serve to provide an understanding of:

- The key biodiversity receptor values and sensitivities for each WPP as these relate to protected areas, internationally recognized areas, modified, natural and critical habitat, vegetation, flora, and fauna species; and
- The importance/sensitivity of these biodiversity values and the estimated risks/impacts of the WPPs on these values.

This information forms the first step in understanding of receptor sensitivity and impacts to inform the develop of the action plan for managing biodiversity.

Where necessary, global datasets on protected areas and habitat types were used to interpret the existing information where necessary. *Importantly, no new primary information was generated at this stage (relied solely on the existing baseline and impact assessment information from ESIA and CHA reports).*

For more detailed summary information for each WPP, the reader is referred to **Annexure 1** of the BAPF (this document).

4.1 HARMANCIK WIND POWER PLANT

Summary for Wind Farm Harmancik		
Status	Not yet operational	
Available Baseline Information for Biodiversity (ESIA, CHA report)		
1 Protected Areas / Internationally Recognized Areas	Overlaps with Biga Dağları ('Biga Mountains') and Çanakkale Strait, both being designated Key Biodiversity Areas (KBAs) and International Bird and Biodiversity Areas (IBAs).	
2 Habitat	2.1 Natural habitat	Yes- most of the project area is located in natural habitat, that being <i>Quercus pinus</i> woodland, which dominates the AoI.
	2.2 Critical habitat	Yes – critical habitat triggered for one bird species, Lesser Spotted Eagle (<i>Clanga pomarina</i> , nationally EN) and one flora species - <i>Verbascum hasbenii</i> (nationally CR).
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, beekeeping, forestry, and animal grazing.
3 Species	3.1 Flora	Several regional endemics and rare species identified, including species classified as VU at the national level, and associated mainly with <i>Q. pinus</i> woodland habitat. <i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>
	3.3 Bats	Threatened species of bats identified, amongst several common resident species and long-distance migrants. Includes species with high collision risk. <i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>

Summary for Wind Farm Harmancik			
3.4 Other faunal species	Threatened reptile species: Common tortoise (<i>Testudo graeca</i> , globally VU). Threatened small mammals may potentially occur but not documented during field surveys. <i>Additional surveys of terrestrial fauna for access roads are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>		
Available Information on Biodiversity Risks/Impacts (from ESIA report)			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Major	Major	Moderate
2 Impact on natural habitat	Moderate	Moderate	Not assessed
3 Impact on critical habitat	Not assessed	Not assessed	Not assessed
4 Impact on flora	Major	Moderate	Moderate
5 Impact to birds	Minor	Moderate - Major	Moderate
6 Impact to bats	Negligible	Major	Major
7 Impact to other fauna	Minor	Minor	Negligible
8 Impact of invasive species	Not assessed	Not assessed	Minor-Moderate
Gaps in Information Requiring further Investigation (identified by ERM)			
<ul style="list-style-type: none"> Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants. No Collision Risk Assessment undertaken based on Collision Risk Modelling. VP survey data insufficient to inform collision risk assessment. Access roads need to be assessed for habitat, flora, and terrestrial fauna. Insufficient information regarding ecosystem services. Insufficient information regarding IAS risk. No quantification of estimated loss of natural habitat and critical habitat. Impacts on critical habitat not assessed. ESIA and CHA will need to be updated following the collection and analysis of additional baseline data regarding habitats, flora and fauna. 			

4.2 ARMUTCUK WIND POWER PLANT

Summary for Wind Farm Armutcuk		
Status	Not yet operational	
Available Baseline Information for Biodiversity (ESIA, CHA report)		
1 Protected Areas / Internationally Recognized Areas	Overlaps with Kaz Dağları ('Kaz Mountains'), a designated Key Biodiversity Area (KBA) and International Bird and Biodiversity Area (IBA).	
2 Habitat	2.1 Natural habitat	Yes - most of the project area is located in natural habitat, that being <i>Pinus nigra</i> woodland, which dominates the AoI.
	2.2 Critical habitat	No - critical habitat not triggered.
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, beekeeping, forestry, and animal grazing.
3 Species	3.1 Flora	Several regional endemics and rare species identified, including species classified as VU at the national level, and associated mainly with <i>Pinus nigra</i> woodland habitat. <i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>

Summary for Wind Farm Armutcuk			
3.3 Bats	Threatened species of bats identified, amongst several common resident species and long-distance migrants. Includes species with high collision risk. <i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>		
3.4 Other faunal species	Threatened reptile species: Common tortoise (<i>Testudo graeca</i> , globally VU). Threatened small mammals may potentially occur but not documented during field surveys. <i>Additional surveys of terrestrial fauna for access roads are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>		
Available Information on Biodiversity Risks/Impacts (from ESIA report)			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Major	Major	Moderate
2 Impact on natural habitat	Moderate	Moderate	Not assessed
3 Impact on critical habitat	Not relevant (no critical habitat identified)		
4 Impact on flora	Moderate	Minor-Moderate	Negligible
5 Impact to birds	Minor - Moderate	Moderate - Major	Moderate
6 Impact to bats	Negligible	Major	Major
7 Impact to other fauna	Minor	Minor	Negligible
8 Impact of invasive species	Not assessed	Not assessed	Minor-Moderate
Gaps in Information Requiring further Investigation (identified by ERM)			
<ul style="list-style-type: none"> Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants. No Collision Risk Assessment undertaken based on Collision Risk Modelling. VP survey data insufficient to inform collision risk assessment. Access roads need to be assessed for habitat, flora, and terrestrial fauna. Insufficient information regarding ecosystem services. Insufficient information regarding IAS risk. No quantification of estimated loss of natural habitat and critical habitat. Impacts on critical habitat not assessed. ESIA and CHA will need to be updated following the collection and analysis of additional baseline data regarding habitats, flora, and fauna. 			

4.3 KESTANEDERESI WIND POWER PLANT

Summary for Wind Farm Kestanderesi			
Status	Not yet operational		
Available Baseline Information for Biodiversity (ESIA, CHA report)			
1 Protected Areas / Internationally Recognized Areas	Overlaps with Boz Dağları ('Biga Mountains'), a designated Key Biodiversity Area (KBA) and International Bird and Biodiversity Area (IBA).		
2 Habitat	2.1 Natural habitat	Yes – 53% of the project area is located in natural habitat, that being <i>Pinus nigra</i> woodland and forests, which dominates the AoI.	
	2.2. Critical habitat	No – critical habitat not triggered.	
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, beekeeping, forestry, and animal grazing.	
3 Species	3.1 Flora	Several regional endemics and rare species identified, including species classified as LC at the national level, and associated mainly with <i>black pine</i> forest habitats.	

Summary for Wind Farm Kestanderesi			
		<i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.3 Bats	Threatened species of bats identified, amongst several common resident species and long-distance migrants. Includes species with high collision risk. <i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.4 Other faunal species	<p>Threatened reptile species: Common tortoise (<i>Testudo graeca</i>, globally VU). Threatened small mammals may potentially occur but not documented during field surveys.</p> <p>Whilst IUCN status is LC, Apollo butterfly (<i>Parnassius apollo</i>) associated with host plant species (<i>Sedum</i> sp.), is a KBA trigger species which may potentially occur in the Project Area but was not documented during the initial field surveys. Further surveys are required to confirm this species and the host plant.</p> <p>Other invertebrates (<i>Bradyporus macrogaster</i> and <i>Chorthippus bozdagh</i>) that show an affinity for grassland, scrub and shrubland habitats, were identified as being potentially present but requiring further baseline data collection to verify their occurrence in the project study area. Whilst the habitats in the AoI are unlikely to support <i>C. bozdagh</i>, they could possibly support <i>B. macrogaster</i>. It has been recommended that field surveys be undertaken to confirm the habitats and presence of this species or that experts be consulted to assist with verifying the potential for this species to occur based on the WPP location and habitat types of present.</p> <p><i>Additional surveys of butterflies (focused on P. apollo) for selected turbine sites where host plants (Sedum sp. are predicted to occur), and of terrestrial fauna for access roads, are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i></p>	
Available Information on Biodiversity Risks/Impacts (from ESIA report)			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Major	Major	Moderate
2 Impact on natural habitat	Moderate	Moderate	Minor
3 Impact on critical habitat	Not relevant (no critical habitat identified)		
4 Impact on flora	Minor	Minor	Negligible
5 Impact to birds	Minor	Moderate - Major	Moderate
6 Impact to bats	Negligible	Moderate - Major	Major
7 Impact to other fauna	Minor	Minor	Minor
8 Impact of invasive species	Not assessed	Not assessed	Minor-Moderate
Gaps in Information Requiring further Investigation (identified by ERM)			
<ul style="list-style-type: none"> Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants. No Collision Risk Assessment undertaken based on Collision Risk Modelling. VP survey data insufficient to inform collision risk assessment. Access roads need to be assessed for habitat, flora, and terrestrial fauna. 			

Summary for Wind Farm Kestanderesi

- Insufficient information regarding ecosystem services.
- Insufficient information regarding IAS risk.
- No quantification of estimated loss of natural habitat and critical habitat.
- Impacts on critical habitat not assessed.
- ESIA and CHA will need to be updated following the collection and analysis of additional baseline data regarding habitats, flora, and fauna.

4.4 OVACIK WIND POWER PLANT

Summary for Wind Farm Ovacik

Status		Not yet operational	
Available Baseline Information for Biodiversity (ESIA, CHA report)			
1 Protected Areas / Internationally Recognized Areas		The Project itself is not located within a legally protected or internationally recognized area, the Project AoI (Area of Influence) overlaps partially with the Kaz Dağları ('Kaz Mountains') (MAR008), the Biga Dağları ('Biga Mountains') (MAR009) and the Çanakkale Strait (MAR004) which are designated as Key Biodiversity Areas (KBA) and International Bird and Biodiversity Areas (IBA).	
2 Habitat	2.1 Natural habitat	Yes – most of the project area is located in natural habitat, that being <i>Pinus brutia</i> woodland, which dominates the AoI.	
	2.2 Critical habitat	Yes – critical habitat possibly triggered for two bird species: Short-toed Snake-eagle (<i>Circaetus gallicus</i> , nationally VU) and Lesser Spotted Eagle (<i>Clanga pomarina</i> , nationally EN).	
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, beekeeping, forestry, and animal grazing.	
3 Species	3.1 Flora	Several regional flora endemics and rare species identified, including species classified as VU at the national level, and associated mainly with <i>red pine</i> forest habitats. <i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.3 Bats	Threatened species of bats identified, amongst several common resident species and long-distance migrants. Includes species with high collision risk. <i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.4 Other faunal species	Threatened reptile species: Common tortoise (<i>Testudo graeca</i> , globally VU). Threatened small mammals may potentially occur but not documented during field surveys.	
Available Information on Biodiversity Risks/Impacts (from ESIA report)			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Major	Major	Moderate
2 Impact on natural habitat	Moderate	Moderate	Minor
3 Impact on critical habitat	Not assessed	Not assessed	Not assessed
4 Impact on flora	Moderate	Negligible	Minor
5 Impact to birds	Minor-Moderate	Moderate - Major	Minor - Moderate
6 Impact to bats	Negligible	Moderate - Major	Moderate
7 Impact to other fauna	Minor	Minor	Negligible
8 Impact of invasive species	Not assessed	Not assessed	Minor-Moderate

Summary for Wind Farm Ovacik

Gaps in Information Requiring further Investigation (identified by ERM)

- Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants.
- No Collision Risk Assessment undertaken based on Collision Risk Modelling.
- VP survey data insufficient to inform collision risk assessment.
- Access roads need to be assessed for habitat, flora and terrestrial fauna.
- Insufficient information regarding ecosystem services.
- Insufficient information regarding IAS risk.
- No quantification of estimated loss of natural habitat and critical habitat.
- Impacts on critical habitat not assessed.
- ESIA and CHA will need to be updated following the collection and analysis of additional baseline data regarding habitats, flora and fauna.

4.5 DAMPINAR WIND POWER PLANT

Summary for Wind Farm Dampinar

Status	Not yet operational		
Available Baseline Information for Biodiversity (ESIA, CHA report)			
1 Protected Areas / Internationally Recognized Areas	The Project footprint is not located within a legally protected or internationally recognized area. However, the Indirect Area of Influence (IAoI) = 15km of the Project, partially overlaps with two Key Biodiversity Areas (KBA), namely the Küçük Menderes Delta, and Mahal Hills.		
2 Habitat	2.1 Natural habitat	Yes – most of the project area is located in natural habitat, that being <i>Pinus nigra</i> woodland, which dominates the AoI.	
	2.2 Critical habitat	No – Critical habitat not triggered.	
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, beekeeping, forestry, and animal grazing.	
3 Species	3.1 Flora	Several regional flora endemics and rare species identified, including species classified as VU at the national level, and associated mainly with <i>red pine</i> forest habitats. <i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.3 Bats	Threatened species of bats were not identified during the field surveys, several common Least Concern (LC) residents were identified. <i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.4 Other faunal species	Threatened reptile species: Common tortoise (<i>Testudo graeca</i> , globally VU). Threatened small mammals may potentially occur but not documented during field surveys.	
Available Information on Biodiversity Risks/Impacts (from ESIA report)			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Major	Major	Minor
2 Impact on natural habitat	Moderate	Moderate	Minor
3 Impact on critical habitat	<i>Not relevant (no critical habitat identified)</i>		
4 Impact on flora	Negligible	Negligible	Minor
5 Impact to birds	Minor-Moderate	Minor - Moderate	Major

Summary for Wind Farm Dampinar			
6 Impact to bats	Negligible	Moderate - Major	Major
7 Impact to other fauna	Minor	Minor	Negligible
8 Impact of invasive species	Not assessed	Not assessed	Minor
Gaps in Information Requiring further Investigation (identified by ERM)			
<ul style="list-style-type: none"> Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants. No Collision Risk Assessment undertaken based on Collision Risk Modelling. VP survey data insufficient to inform collision risk assessment. Access roads need to be assessed for habitat, flora and terrestrial fauna. Insufficient information regarding ecosystem services. Insufficient information regarding IAS risk. No quantification of estimated loss of natural habitat. ESIA and CHA will need to be updated following the collection and analysis of additional baseline data regarding habitats, flora and fauna. 			

4.6 AKKÖY WIND POWER PLANT

Summary for Wind Farm Akköy			
Status	Operational		
Available Baseline Information for Biodiversity (ESIA, CHA report)			
1 Protected Areas / Internationally Recognized Areas	Overlaps with Buyuk Menderes KBA-IBA. In addition the direct area of influence overlaps with Büyük Menderes Delta national park (national protected area) and indirect area of influence overlaps with Lake Bafa KBA-IBA which is designated as a legally Protected Area (National Park and National reserve) as well.		
2 Habitat	2.1 Natural habitat	Yes – most of the project area is located in natural habitat, that being mainly <i>maquis with xeromorphic shrubs</i> , which dominates the AoI.	
	2.2 Critical habitat	Yes – critical habitat possibly triggered for one bird species: Dalmatian Pelican (<i>Pelecanus crispus</i> , nationally VU).	
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, and animal grazing.	
3 Species	3.1 Flora	Several regional flora endemics and rare species identified, including species classified as VU at the national level, and associated mainly with forest habitats. <i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.3 Bats	Threatened species of bats were not identified during the field surveys, several common Least Concern (LC) residents were identified. <i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.4 Other faunal species	Threatened reptile species: Common tortoise (<i>Testudo graeca</i> , globally VU). Threatened small mammals may potentially occur but not documented during field surveys.	
Available Information on Biodiversity Risks/Impacts (from ESIA report)			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Moderate	Major	Minor
2 Impact on natural habitat	Moderate	Moderate	Minor

Summary for Wind Farm Akköy			
3 Impact on critical habitat	Not assessed		
4 Impact on flora	Moderate	Negligible	Minor
5 Impact to birds	Moderate	Moderate - Major	Major
6 Impact to bats	Negligible	Major	Major
7 Impact to other fauna	Minor	Negligible-Minor	Negligible
8 Impact of invasive species	Not assessed	Not assessed	Minor
Gaps in Information Requiring further Investigation (identified by ERM)			
<ul style="list-style-type: none"> Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants. No Collision Risk Assessment undertaken based on Collision Risk Modelling. VP survey data insufficient to inform collision risk assessment. Access roads need to be assessed for habitat, flora and terrestrial fauna. Insufficient information regarding ecosystem services. Insufficient information regarding IAS risk. No quantification of estimated loss of natural habitat. ESIA and CHA will need to be updated following the collection and analysis of additional data regarding habitats, flora and fauna. 			

4.7 HACIHIDIRLAR WIND POWER PLANT

Summary for Wind Farm Hacıhidirlar			
Status	Not yet operational		
Available Baseline Information for Biodiversity (ESIA, CHA report)			
1 Protected Areas / Internationally Recognized Areas	Overlaps with Akdag - Denizli, which is designated as a Key Biodiversity Area (KBA).		
2 Habitat	2.1 Natural habitat	Yes – most of the project area is located in natural habitat, that being mainly <i>Pinus brutia</i> and <i>Pinus nigra forests and alpine grassland</i> , which dominates the AoI.	
	2.2 Critical habitat	No – Critical habitat not triggered.	
	2.3 Ecosystem services	No information.	
3 Species	3.1 Flora	Several regional flora endemics and rare species identified, including species classified as Least Concern (LC) mainly, and associated with forest and grassland habitats. <i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.3 Bats	Threatened species of bats identified, amongst several common resident species and long-distance migrants. Includes species with high collision risk. <i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.4 Other faunal species	Threatened reptile species: Common tortoise (<i>Testudo graeca</i> , globally VU). Threatened small mammals may potentially occur but not documented during field surveys. <i>Additional surveys of terrestrial fauna for access roads are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
Available Information on Biodiversity Risks/Impacts (from ESIA report)			

Summary for Wind Farm Hacıhidirlar			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Major	Moderate	Moderate
2 Impact on natural habitat	Major	Major	Moderate
3 Impact on critical habitat	<i>Not relevant (no critical habitat identified)</i>		
4 Impact on flora	Major	Negligible	Moderate
5 Impact to birds	Moderate	Moderate - Major	Minor-Major
6 Impact to bats	Negligible	Major	Major
7 Impact to other fauna	Minor	Minor - Negligible	Moderate
8 Impact of invasive species	<i>Not assessed</i>	<i>Not assessed</i>	Minor
Gaps in Information Requiring further Investigation (identified by ERM)			
<ul style="list-style-type: none"> Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants. No Collision Risk Assessment undertaken based on Collision Risk Modelling. VP survey data insufficient to inform collision risk assessment. Access roads need to be assessed for habitat, flora and terrestrial fauna. No information regarding ecosystem services. Insufficient information regarding IAS risk. No quantification of estimated loss of natural habitat. ESIA and CHA will need to be updated following the collection and analysis of additional baseline data regarding habitats, flora and fauna. 			

4.8 IHLAMUR WIND POWER PLANT

Summary for Wind Farm Ihlamur		
Status	Not yet operational	
Available Baseline Information for Biodiversity (ESIA, CHA report)		
1 Protected Areas / Internationally Recognized Areas	The Project footprint is not located within any legally protected or internationally recognized area. The AoI however overlaps with the Kaz Dağları ('Kaz Mountains') MAR008 which is a designated Key Biodiversity Area (KBA) and International Bird and Biodiversity Area (IBA).	
2 Habitat	2.1 Natural habitat	Yes – most of the project area is located in natural habitat, that being mainly thermophilus deciduous and <i>Pinus brutia</i> woodland, which dominates the AoI.
	2.2 Critical habitat	Yes – critical habitat possibly triggered for one bird species: Lesser Spotted Eagle (<i>Clanga pomarine</i> , nationally EN).
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, and animal grazing.
3 Species	3.1 Flora	Several regional flora endemics and rare species identified, including species classified as Vulnerable (VU) mainly, and associated with forest and grassland habitats. <i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>
	3.3 Bats	Threatened species of bats identified, amongst several common resident species and long-distance migrants. Includes species with high collision risk. <i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>

Summary for Wind Farm Ihlamur			
3.4 Other faunal species	Threatened reptile species: Common tortoise (<i>Testudo graeca</i> , globally VU). Threatened small mammals may potentially occur but not documented during field surveys.		
Available Information on Biodiversity Risks/Impacts (from ESIA report)			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Moderate	Moderate	Minor
2 Impact on natural habitat	Moderate	Moderate	Minor
3 Impact on critical habitat	Not assessed	Not assessed	Not assessed
4 Impact on flora	Moderate	Negligible	Minor
5 Impact to birds	Moderate	Moderate - Major	Minor-Major
6 Impact to bats	Negligible	Moderate - Major	Major
7 Impact to other fauna	Minor	Minor	Negligible
8 Impact of invasive species	Not assessed	Not assessed	Minor
Gaps in Information Requiring further Investigation (identified by ERM)			
<ul style="list-style-type: none"> Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants. No Collision Risk Assessment undertaken based on Collision Risk Modelling. VP survey data insufficient to inform collision risk assessment. Access roads need to be assessed for habitat, flora and terrestrial fauna. Insufficient information regarding ecosystem services. Insufficient information regarding IAS risk. No quantification of estimated loss of natural habitat. ESIA and CHA will need to be updated following the collection and analysis of additional baseline data regarding habitats, flora and fauna. 			

4.9 UYGAR WIND POWER PLANT

Summary for Wind Farm Uygur		
Status	Not yet operational	
Available Baseline Information for Biodiversity (ESIA, CHA report)		
1 Protected Areas / Internationally Recognized Areas	Uygur WPP does not overlap with any protected nor international recognized areas.	
2 Habitat	2.1 Natural habitat	Yes – some parts the project area is located in natural habitat, that being mainly <i>Red pine and Black pine damaged oak habitats</i> , which dominates the AoI.
	2.2 Critical habitat	Yes – critical habitat triggered potentially for one bird species: Black stork (<i>Ciconia nigra</i> , IUCN LC).
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, and animal grazing, and mushroom production.
3 Species	3.1 Flora	Several regional flora endemics and rare species identified, including species classified as Vulnerable (VU) mainly, and associated with forest and grassland habitats. <i>Additional flora surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>
	3.2 Birds	Several species of raptors and storks identified as being at risk of collision, with threatened species identified. <i>Additional bird VP surveys and breeding bird surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>
	3.3 Bats	Threatened species of bats identified, amongst several common resident species and long-distance migrants. Includes species with high collision risk.

Summary for Wind Farm Uygur			
		<i>Additional bat surveys are planned for 2024 and are currently underway. Information contained in the ESIA will need to be updated upon completion of the field surveys.</i>	
	3.4 Other faunal species	Threatened reptile species: Common tortoise (<i>Testudo graeca</i> , globally VU). Threatened small mammals may potentially occur but not documented during field surveys.	
Available Information on Biodiversity Risks/Impacts (from ESIA report)			
Impact Type	Construction	Operation	Residual
1 Impact on Protected Areas / Internationally Recognized Areas	Not relevant		
2 Impact on natural habitat	Major	Major	Moderate
3 Impact on critical habitat	Not assessed	Not assessed	Not assessed
4 Impact on flora	Moderate	Negligible	Minor
5 Impact to birds	Minor	Moderate - Major	Minor-Major
6 Impact to bats	Negligible	Moderate - Major	Major
7 Impact to other fauna	Minor	Minor	Negligible
8 Impact of invasive species	Not assessed	Not assessed	Not assessed
Gaps in Information Requiring further Investigation (identified by ERM)			
<ul style="list-style-type: none"> Lack of data on flora species locations to inform mitigation for protected/threatened/rare endemic plants. No Collision Risk Assessment undertaken based on Collision Risk Modelling. VP survey data insufficient to inform collision risk assessment. Access roads need to be assessed for habitat, flora and terrestrial fauna. Insufficient information regarding ecosystem services. Insufficient information regarding IAS risk. No quantification of estimated loss of natural habitat. ESIA and CHA will need to be updated following the collection and analysis of additional baseline data regarding habitats, flora and fauna. 			

5. ADDITIONAL / SUPPLEMENTARY STUDIES

Enerjisa has commissioned several additional (supplementary surveys) of habitats, flora and fauna, to improve the biodiversity baseline for each WPP, and it is understood that the findings of these surveys will be used to update the ESIA reports, and where necessary, the BAPF in future. A summary of the additional supplementary field surveys and studies for each WPP is presented in Table 5-1, below.

TABLE 5-1 ADDITIONAL/SUPPLEMENTARY STUDIES REQUIRED

PROJECT NAME	ADDITIONAL / SUPPLEMENTARY STUDIES REQUIRED (COMMISSIONED AND ONGOING)
HARMANCIK WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p><i>Number of Seed Collection Areas: 7</i> <i>Survey period: April-September 2024</i> <i>Monitoring team: 3 surveyors</i> <i>Total visit days: 8 days, depending on exact field scheduling</i></p> <p>Target species and surveys periods as follow;</p> <ul style="list-style-type: none"> ○ <i>Verbascum hasbenii</i> – June-July 2024 ○ <i>Digitalis trojana</i> – August-September 2024 ○ <i>Verbascum lyidium var. heterandrum</i> – June-July 2024 ○ <i>Ferulago trojana</i> – June-July 2024 ○ <i>Crocus candidus</i> -Early April 2024 ○ <i>Cirsium balikesirensense</i> -June-July 2024 <p>Access Road Surveys: <i>Study area: Access Road:</i></p> <ul style="list-style-type: none"> ○ With priority for KBA overlaps ○ New sections ○ Where existing sections will be widened <p><i>Targets: Habitats and flora, terrestrial fauna</i> <i>Survey period: April – May 2024</i> <i>Once each month, two visits</i> <i>Survey team: Not determined</i> <i>Total visit days: Not determined</i></p> <p>Vantage point surveys: <i>No of VP: 3</i> <i>Survey period: March-November 2024</i> <i>Total monitoring effort: 180 hr/VP</i> <i>Monitoring team: 3 surveyors</i> <i>Total visit days: 26, depending on exact field scheduling</i></p> <p>Breeding bird surveys: <i>Study area: AoI during construction</i> <i>AoI, and IAoI if necessary, for breeding raptors, during operation</i> <i>Survey period: April-July 2024</i> <i>Monitoring team: 3 surveyors</i> <i>Total visit days: 4, once each month</i></p> <p>Bat surveys: <i>Study area: Proposed turbine locations</i> <i>Number of ground level static detectors: 6</i> <i>Survey period: April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly</i></p>

PROJECT NAME	ADDITIONAL / SUPPLEMENTARY STUDIES REQUIRED (COMMISSIONED AND ONGOING)
	<p>temperature should be higher than 10 degree Celsius) <i>Monitoring team:</i> 2 surveyors <i>Total visit day/nights:</i> 30</p>
ARMUTCUK WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p><i>Number of Seed Collection Areas:</i> 10 <i>Survey period:</i> April-September 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 5 days, depending on exact field scheduling</p> <p>Target species and surveys periods as follow;</p> <ul style="list-style-type: none"> ○ <i>Digitalis trojana</i> – August-September 2024 ○ <i>Cirsium balikesirense</i> – June-July 2024 ○ <i>Cyclamen hederifolium</i> – October 2024 <p>Access Road Surveys: <i>Study area:</i> Access road:</p> <ul style="list-style-type: none"> ○ With priority for KBA overlaps ○ New sections ○ Where existing sections will be widened <p><i>Targets:</i> Habitats and flora, terrestrial fauna <i>Survey period:</i> April – May 2024 <i>Once each month, two visits</i> <i>Survey team:</i> Not determined <i>Total visit days:</i> Not determined</p>
	<p>Vantage point surveys: <i>No of VP:</i> 6 <i>Survey period:</i> March-November 2024 <i>Total monitoring effort:</i> 108 hr/VP <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 31, depending on exact field scheduling</p> <p>Breeding bird surveys: <i>Study area:</i> AoI during construction AoI, and IAoI if necessary, for breeding raptors, during operation <i>Survey period:</i> April-July 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 4, once each month</p>
	<p>Bat surveys: <i>Study area:</i> Proposed turbine locations <i>Number of ground level static detectors:</i> 13 <i>Survey period:</i> April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly temperature should be higher than 10 degree Celsius) <i>Monitoring team:</i> 2 surveyors <i>Total visit day/nights:</i> 30</p>
KESTANEDERESI WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p><i>Number of Seed Collection Areas:</i> 18 <i>Survey period:</i> June-October 2024 <i>Monitoring team:</i> 3 surveyors</p>

PROJECT NAME	ADDITIONAL / SUPPLEMENTARY STUDIES REQUIRED (COMMISSIONED AND ONGOING)
	<p><i>Total visit days:</i> 60 days, depending on exact field scheduling.</p> <p>Target species and surveys periods as follows:"</p> <ul style="list-style-type: none"> ○ <i>Bromus macrocladus</i> -June 2024 ○ <i>Colchicum micaceum</i> -September-October 2024 ○ <i>Ornithogalum improbum</i>- March 2024 ○ <i>Pseudophleum gibbum</i> – End of May-June 2024 ○ <i>Astragalus pisidicus Boiss. & Heldr.</i> – End of May-June 2024 ○ <i>Astragalus strictispinis Boiss.</i> – End of May-June 2024 ○ <i>Salvia pisidica Boiss. & Heldr. ex Benth.</i> – End of May-June 2024 ○ <i>Scutellaria orientalis subsp. carica J.R.Edm.</i> – End of May-June 2024 <p>Access Road Surveys: <i>Study area:</i> Access Road:</p> <ul style="list-style-type: none"> ○ With priority for KBA overlaps ○ New sections ○ Where existing sections will be widened <p><i>Targets:</i> Habitats and flora, terrestrial fauna <i>Survey period:</i> April – May 2024 <i>Once each month, two visits</i> <i>Survey team:</i> Not determined <i>Total visit days:</i> Not determined</p> <p>Butterfly Surveys:</p> <p>Target species: <i>Parnassius apollo</i></p> <p>The aim of the surveys:</p> <ul style="list-style-type: none"> ○ Targeting <i>Sedum sp.</i> potential locations (host plant for <i>P. apollo</i>) in the vicinity of turbines: T7, T9, T10, T13, T21, T22 and T26 ○ Clarify <i>Parnassius apollo</i> presence ○ Provide baseline for CHA revision ○ Provide information for BMP revision <p><i>Survey period:</i> Late Spring – Early Summer <i>Total visit days:</i> 9 days (4 visits, 3 days each visit, Spaced 2-3 weeks apart) <i>Survey team:</i> 2 surveyors</p> <p>Vantage point surveys: <i>No of VP:</i> 7 <i>Survey period:</i> March-November 2024 <i>Total monitoring effort:</i> 108 hr/VP <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 54, depending on exact field scheduling</p> <p>Breeding bird surveys: <i>Study area:</i> AoI during construction AoI, and IAoI if necessary, for breeding raptors, during operation <i>Survey period:</i> April-July 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 4, once each month</p> <p>Bat surveys: <i>Study area:</i> Proposed turbine locations <i>Number of ground level static detectors:</i> 16 <i>Survey period:</i> April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly temperature should be higher than 10 degree Celsius)</p>

PROJECT NAME	ADDITIONAL / SUPPLEMENTARY STUDIES REQUIRED (COMMISSIONED AND ONGOING)
	<p><i>Monitoring team:</i> 3 surveyors <i>Total visit day/nights:</i> 30</p>
OVACIK WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p>Target species and surveys periods as follow; <ul style="list-style-type: none"> ○ <i>Crocus candidus</i> - March </p> <p>Vantage point surveys: <i>No of VP:</i> 6 <i>Survey period:</i> March-November 2024 <i>Total monitoring effort:</i> 108 hr/VP <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 31 days</p> <p>Breeding bird surveys: <i>Study area:</i> AoI during construction AoI, and IAoI if necessary, for breeding raptors, during operation <i>Survey period:</i> April-July 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 4, once each month</p> <p>Bat surveys: <i>Study area:</i> Proposed turbine locations <i>Number of ground level static detectors:</i> 7 <i>Survey period:</i> April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly temperature should be higher than 10 degree Celsius) <i>Monitoring team:</i> 2 surveyors <i>Total visit day/nights:</i> 30</p>
DAMPINAR WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p><i>Number of Seed Collection Areas:</i> There is no direct spatial data for target flora species. The species will be surveyed within suitable habitat. <i>Survey period:</i> June-October 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 2 days, depending on exact field scheduling</p> <p>Target species and surveys periods as follow; <ul style="list-style-type: none"> ○ <i>Scutellaria orientalis</i>- June-July 2024 ○ <i>Cyclamen hederifolium</i> – October 2024 </p> <p>Vantage point surveys: <i>No of VP:</i> 7 <i>Survey period:</i> March-November 2024 <i>Total monitoring effort:</i> 108 hr/VP <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 36 days</p> <p>Breeding bird surveys: <i>Study area:</i> Proxy during construction AoI, and IAoI if necessary, for breeding raptors, during operation <i>Survey period:</i> April-July 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 4, once each month</p>

PROJECT NAME	ADDITIONAL / SUPPLEMENTARY STUDIES REQUIRED (COMMISSIONED AND ONGOING)
	<p>Bat surveys: <i>Study area:</i> Nearby habitats mimicking proposed turbine locations <i>Number of ground level static detectors:</i> 8 <i>Survey period:</i> April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly temperature should be higher than 10 degree Celsius) <i>Monitoring team:</i> 2 surveyors <i>Total visit day/nights:</i> 30</p>
AKKÖY WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p><i>Number of Seed Collection Areas:</i> There is no direct spatial data for target flora species. The species will be surveyed within suitable habitat. <i>Survey period:</i> June-July 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 3 days, depending on exact field scheduling</p> <p>Target species and surveys periods as follow;</p> <ul style="list-style-type: none"> ○ <i>Globularia alypum</i> - June-July 2024 ○ <i>Centaurea polyclada</i> - June-July 2024
	<p>Vantage point surveys: <i>No of VP:</i> 4 <i>Survey period:</i> Year-round in 2024 <i>Total monitoring effort:</i> Est. 48-60 hr/VP/season <i>Monitoring team:</i> One full-time surveyor <i>Total visit days:</i> Every week from each VP</p> <p>Breeding bird surveys: <i>Study area:</i> AoI, and IAoI if necessary, for breeding raptors, during operation <i>Survey period:</i> April-July 2024 <i>Monitoring team:</i> Full-time surveyor <i>Total visit days:</i> 4, once each month</p>
	<p>Bat surveys: <i>Study area:</i> Turbine locations <i>Number of ground level static detectors:</i> 6 <i>Survey period:</i> April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly temperature should be higher than 10 degree Celsius) <i>Monitoring team:</i> 2 surveyors <i>Total visit days:</i> 30</p>
HACIHIDIRLAR WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p><i>Number of Seed Collection Areas:</i> There is no direct spatial data for target flora species. The species will be surveyed within suitable habitat. <i>Survey period:</i> June-July 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 2 days, depending on exact field scheduling</p> <p>Target species and surveys periods as follow;</p> <ul style="list-style-type: none"> ○ <i>Centaurea aphrodisa</i> – May-June 2024 ○ <i>Minuartia recurve</i> – May 2024 ○ <i>Phlomis carica</i> - June-July 2024 ○ <i>Erysimum caricum</i> – May-June 2024

PROJECT NAME	ADDITIONAL / SUPPLEMENTARY STUDIES REQUIRED (COMMISSIONED AND ONGOING)
	<p>Access Road Surveys: <i>Study area:</i> Access road:</p> <ul style="list-style-type: none"> ○ With priority for KBA overlaps ○ New sections ○ Where existing sections will be widened <p><i>Targets:</i> Habitats and flora, terrestrial fauna <i>Survey period:</i> April – May 2024 <i>Once each month, two visits</i> <i>Survey team:</i> Not determined <i>Total visit days:</i> Not determined</p> <p>Vantage point surveys: <i>No of VP:</i> 5 <i>Survey period:</i> March- November 2024 <i>Total monitoring effort:</i> 108 hr/VP <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 30 days, depending on exact field scheduling</p> <p>Breeding bird surveys: <i>Study area:</i> AoI during construction AoI, and IAoI if necessary, for breeding raptors, during operation <i>Survey period:</i> April-July 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 4, once each month</p> <p>Bat surveys: <i>Study area:</i> Proposed turbine locations <i>Number of ground level static detectors:</i> 10 <i>Survey period:</i> April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly temperature should be higher than 10 degree Celsius) <i>Monitoring team:</i> 2 surveyors <i>Total visit days:</i> 30</p>
IHLAMUR WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p><i>Number of Seed Collection Areas:</i> 17 <i>Survey period:</i> June-October 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 5 days, depending on exact field scheduling Target species and surveys periods as follow;</p> <ul style="list-style-type: none"> ○ <i>Erodium somanum</i> - June-July 2024 ○ <i>Cirsium balikesirensense</i> - June-July 2024 ○ <i>Cyclamen hederifolium</i>- October 2024 <p>Vantage point surveys: <i>No of VP:</i> 5 <i>Survey period:</i> March- November 2024 <i>Total monitoring effort:</i> 108 hr/VP <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 30 days, depending on exact field scheduling</p> <p>Breeding bird surveys: <i>Study area:</i> AoI during construction</p>

PROJECT NAME	ADDITIONAL / SUPPLEMENTARY STUDIES REQUIRED (COMMISSIONED AND ONGOING)
	<p>AoI, and IAoI if necessary, for breeding raptors, during operation <i>Survey period:</i> April-July 2024 <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 4, once each month</p> <p>Bat surveys: <i>Study area:</i> Proposed turbine locations <i>Number of ground level static detectors:</i> 10 <i>Survey period:</i> April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly temperature should be higher than 10 degree Celsius) <i>Monitoring team:</i> 2 surveyors <i>Total visit days:</i> 30</p>
UYGAR WPP	<p>Flora: Flora surveys and seed collection for target species.</p> <p><i>Number of Seed Collection Areas:</i> There is no direct spatial data for target flora species. The species will be surveyed within suitable habitat <i>Survey period:</i> June-September <i>Monitoring team:</i> 3 surveyors <i>Total visit days:</i> 5 days, depending on exact field scheduling Target species and surveys periods as follow;</p> <ul style="list-style-type: none"> o <i>Digitalis trojana</i> – June-September 2024 o <i>Cirsium balikesirensense</i> -June 2024 <p>Vantage point surveys: <i>No of VP:</i> 18 <i>Survey period:</i> March- November 2024 <i>Total monitoring effort:</i> 108 hr/VP <i>Monitoring team:</i> 6 surveyors <i>Total visit days:</i> 93 days, depending on exact field scheduling</p> <p>Breeding bird surveys: <i>Study area:</i> AoI during construction AoI, and IAoI if necessary, for breeding raptors, during operation <i>Survey period:</i> April-July 2024 <i>Monitoring team:</i> 6 surveyors <i>Total visit days:</i> 4, once each month</p> <p>Bat surveys: <i>Study area:</i> Proposed turbine locations <i>Number of ground level static detectors:</i> 30 <i>Survey period:</i> April – October 2024 (exact start and end dates will vary based on that year’s nightly temperature lows for this region, ie lowest nightly temperature should be higher than 10 degree Celsius) <i>Monitoring team:</i> 2 surveyors <i>Total visit days:</i> 30</p>

6. BIODIVERSITY MANAGEMENT PRIORITIES FOR EACH WPP PROJECT

The summary information related to the biodiversity baseline and risk/impact assessment information contained in the ESIA and CHA reports for the various WPPs (see Chapter 5) were used to provide an understanding of the key biodiversity receptor values and sensitivities for each WPP and the estimated risks/impacts of the WPPs on these values. This information forms the first step in understanding of receptor sensitivity and impacts to inform the develop of the action plan for managing biodiversity.

Based on the information collated in Chapter 5, an overall perspective on the biodiversity management priorities for each WPP was established, with Table 6-1 below indicating where management priorities reside for each WPP project.

TABLE 6-1 BIODIVERSTY MANAGEMENT PRIORITIES PER WPP PROJECT

Aspect of Biodiversity	WPP Projects								
	Harmancik	Armutcuk	Kestanederesi	Ovacik	Dampinar	Akköy	Hacıdırlar	Ihlamur	Uygar
Protected Areas	✗	✗	✗	✗	✗	✗	✗	✗	✗
Internationally Recognized Areas	✓	✓	✓	✗	✗	✓	✓	✗	✗
Natural habitat	✓	✓	✓	✓	✓	✓	✓	✓	✓
Critical habitat	✓	✗	✗	✓	✗	✓	✗	✓	✓
Flora of conservation importance	✓	✓	✓	✓	✓	✓	✓	✓	✓
Birds of conservation importance	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bats of conservation importance	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other fauna of conservation importance	✓	✓	✓	✓	✓	✓	✓	✓	✓
Priority Ecosystem Services	Possibly but uncertain: insufficient information from baseline								

Key:



Biodiversity management priority identified and relevant to WPP



Biodiversity management priority not identified or relevant to WPP

This formed the basis for developing the overall strategy and actions for biodiversity management in Chapters 7 and 8:

- Protected Areas: *none of the WPPs overlap with any formal Protected Area*
- Internationally recognized areas: *Harmancik, Armutcuk, Kestanederesi, Ovacik, Akköy and Hacıdırlar WPPs overlap with KBAs*
- Natural habitat: *relevant to all WPPs*
- Critical habitat: *critical habitat associated with Harmancik, Ovacik, Akköy, Hacıdırlar and Ihlamur WPPs*
- Flora of conservation importance: *relevant to all WPPs*

- Bird species of conservation importance: *relevant to all WPPs*
- Bat species of conservation importance: *relevant to all WPPs*
- Other fauna species of conservation importance: *relevant to all WPPs*
- Priority Ecosystem Services: *possibly but uncertain (insufficient information from baseline)*

7. OVERALL STRATEGY FOR BIODIVERSITY MANAGEMENT

The strategy for biodiversity management for the various WPPs considers the biodiversity management priorities reflected in Chapter 6 (based on the collated information in Chapter 5 per WPP). This considers alignment with the requirements for managing biodiversity contained in IFC PS6 (which are further detailed in Chapter 3), which in summary are as follows:

- Alignment with management plans/objectives for protected areas/internationally recognized areas where projects interact with these areas;
- Application of the mitigation hierarchy;
- No Net Loss (NNL) of biodiversity for residual impacts to natural habitat;
- Net Gain (NG) of biodiversity for residual impacts to critical habitat;
- Management of impacts on priority ecosystem services;
- Management of invasive alien species;
- Adaptive management and monitoring approach;
- Life-cycle approach to biodiversity management;
- Management of any cumulative impacts; and
- Addressing key gaps in the existing baseline and impact assessment.

7.1 PROTECTED AREAS / INTERNATIONALLY RECOGNIZED AREAS

Several WPPs are located within or in the vicinity of protected areas or other internationally recognized areas, namely KBAs (Key Biodiversity Areas) – some of which are also designated by BirdLife international as IBAs (Important Bird and Biodiversity Areas).

To align with the IFC PS6 requirements with regards to development located within and/or potentially affecting internationally recognized areas, the following would be required at a minimum:

- Meet the requirements for natural/critical habitat management (see NNL/NG requirements that follow);
- Development must be legally permitted;
- Alignment with conservation objectives and measures defined in management plans (should these exist);
- Consultation with area managers and any affected communities; and
- Measures to be considered that promote/enhance conservation aims and management of the designated areas.

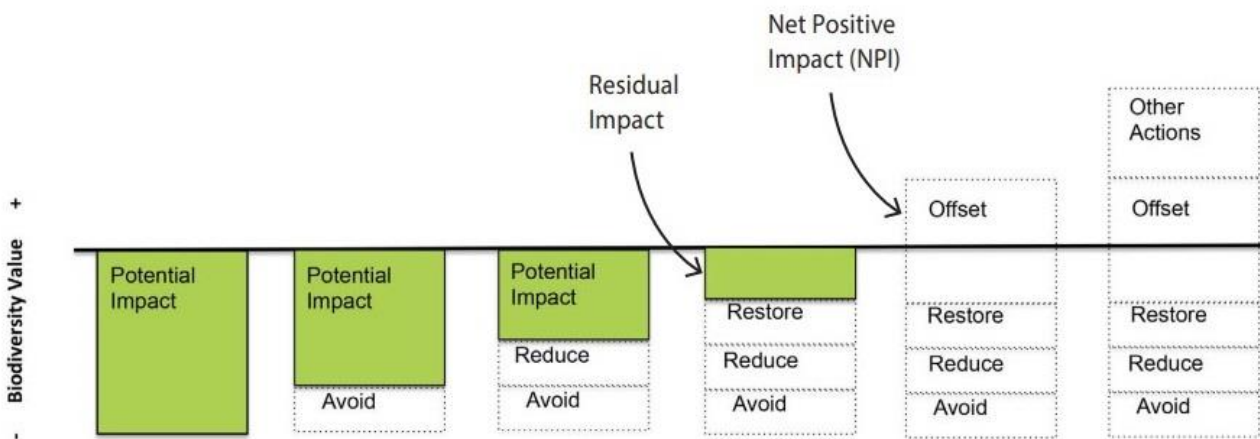
These minimum requirements are reflected in the high-level action plan in Chapter 8.

7.2 APPLICATION OF THE MITIGATION HIERARCHY

To align with IFC PS6, the WPPs would be expected to align with the mitigation hierarchy (see Table 7-1 and Figure 7-1). In essence, this requires Enerjisa 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.

TABLE 7-1 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 7-1 DIAGRAM ILLUSTRATING THE IMPACT MITIGATION HIERARCHY

IFC PS6 requires developers to prioritize the avoidance of impacts to protected areas, natural habitat, critical habitat (and qualifying values) as well as ecosystem services. Mitigation implemented in accordance with the mitigation hierarchy is a requirement for impacts affecting natural habitat, critical habitat and ecosystem services in particular.

7.3 NO NET LOSS STRATEGY FOR NATURAL HABITAT

Biodiversity No Net Loss (NNL) is in simple terms, 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.

In terms of IFC PS6, **NNL is a minimum requirement for activities that impact on natural habitat.**

Since all of the WPPs interact with natural habitat, there is likely to be a loss of natural habitat and a residual impact despite measures to avoid or minimize impacts thereon. Therefore, at a minimum, all WPPs are expected to align with the NNL of natural habitat requirement as follows:

- Avoid and then minimize impacts to natural habitat as far as possible (dealt with as part of the design, planning and ESIA phase);
- Restore natural habitats temporarily impacted by the project (e.g. temporary land-take for temporary access roads, worker camp sites, equipment storage/laydown areas);
- Consider compensation measures for permanent residual impacts to natural habitat caused by permanent habitat transformation (linked to permanent access roads, turbine pads, etc.) that cannot be addressed through habitat restoration measures.

This requires a phased approach to addressing NNL requirements for WPPs impacting on natural habitat involving the following:

- Step 1: quantify the estimated loss of natural habitat and separate into 'temporary' and 'permanent' loss. *Output: quantum of temporary and permanent natural habitat loss.*
- Step 2: set targets and design measures to achieve NNL for temporary loss of natural habitat through onsite habitat restoration. *Output: Compile a natural habitat restoration plan.*
- Step 3: design measures to achieve NNL for permanent loss of natural habitat through compensation measures such as offsets, where required. Undertake necessary stakeholder consultation. *Output: compile a biodiversity offset strategy and plan.*
- Step 4: implement restoration and/or offset plan(s). *Output: implementation of restoration/offset activities and interventions.*
- Step 5: monitor and evaluate the success of restoration/offset interventions and activities and propose corrective actions where necessary based on an adaptive management approach. During this process, it will also be important to confirm the actual footprint of temporary/permanent loss through field surveys, which can then be used to update the quantum of losses and requirements as necessary. *Output: monitoring, evaluation, and adaptive response.*

Where restoration of habitat is possible and necessary, a detailed **habitat restoration plan** and program will need to be compiled and it is recommended that a regional biodiversity expert or qualified ecologist with regional experience in planning and implementing restoration of natural habitats be appointed to assist with the planning and implementation of restoration concerning natural habitats.

It is recommended that any habitat rehabilitation/restoration be aligned with the SER (Society for Ecological Restoration) 'International principles and standards for the practice of ecological restoration', which provides the most comprehensive and robust international framework available to date for ecological restoration projects. These are contained within the publication of the SER (Gann *et al.*, 2019) which can be accessed online from the SER website:

<https://www.ser.org/page/SERStandards/International-Standards-for-the-Practice-of-Ecological-Restoration.htm>

The SER guidelines are intended to support the development of ecological restoration plans, assist implementers with achieving intended goals, while addressing key challenges and navigating trade-offs associated with land management priorities and decisions. The SER establishes eight (8) principles that underpin ecological restoration, which serve as a useful guide when designing restoration plans or strategies that consider biodiversity:

- Engage stakeholders
- Draw on many types of knowledge
- Informed by native reference ecosystems, while consulting environmental change
- Support ecosystem recovery processes
- Assessed against clear goals and objectives using measurable indicators
- Seek the highest level of recovery possible
- Part of a continuum of restorative activities
- Gains cumulative value when applied at large scales

In deciding what type of habitat to reinstate/restore, it is suggested that the 'Decision Tree for Reference Ecosystems' (adapted from the SER) be followed (see Figure 7-2 below).

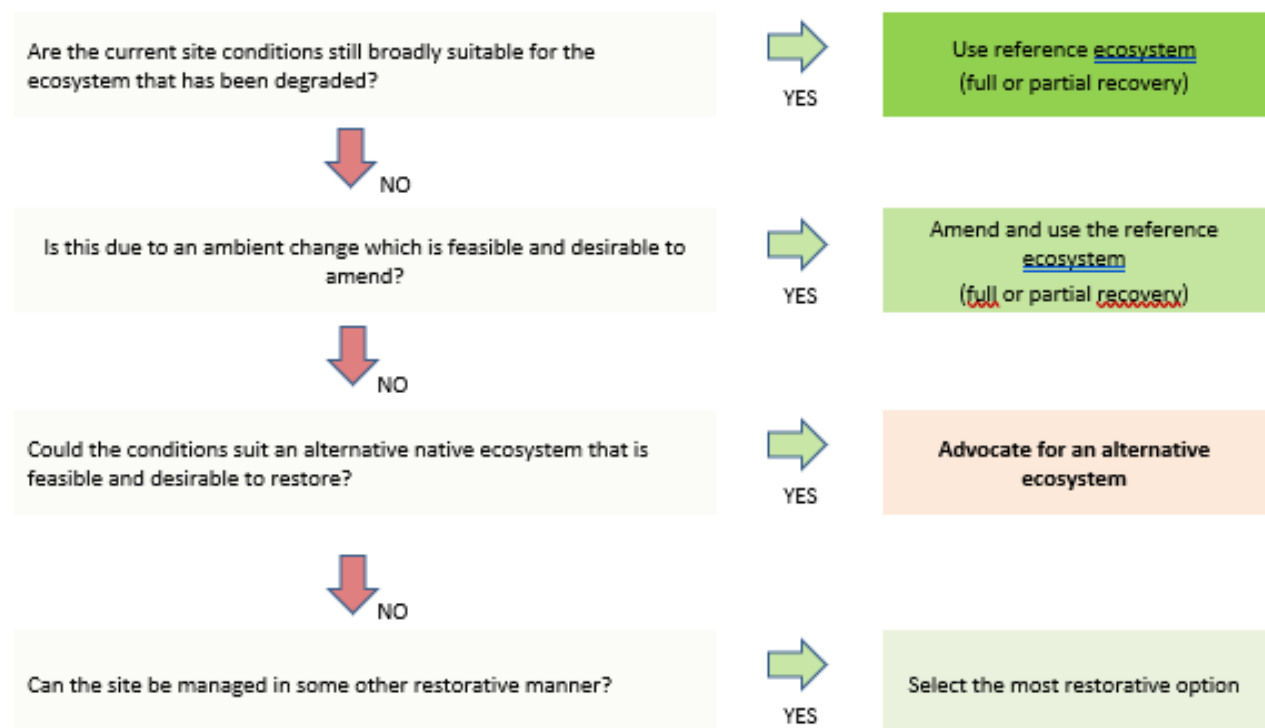


FIGURE 7-2 DECISION TREE FOR INFORMING RESTORATION OF HABITATS

7.4 NET GAIN STRATEGY FOR CRITICAL HABITAT

Biodiversity Net Gain (NG) refers to 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.

In terms of IFC PS6, **NG is to be designed for residual impacts to critical habitat**, qualifying features/values and supporting ecological processes.

Several of the WPPs identify critical habitat, although the interaction with critical habitat and possible negative residual effects remains largely unknown as impacts to critical habitat has not been assessed in the CHA or ESIA and no quantum of critical habitat loss has been calculated.

What is clear from the CHAs presented for the various WPPs, is that with the exception of the endemic plant species *Verbascum hasbenii* (nationally CR) which qualifies the associated woodland habitats supporting this species as critical habitat for the Harmancık WPP, critical habitat has been identified for several migratory bird species where the critical habitat in this case is not associated with terrestrial vegetated habitat such as woodland or grassland, but rather the 'airspace' which the migrant bird species use to navigate through the region during migration. This airspace cannot be simply replaced or offset in the traditional sense, which requires a somewhat different approach to meeting NG for the migratory bird species concerned.

Two different NG strategies are therefore presented below (plant species vs migratory bird species), which are dealt with separately in sections 7.4.1 and 7.4.2, which follow.

7.4.1 NG STRATEGY FOR V. HASBENII

Dealing first with Harmancık WPP, one of the critical habitat-qualifying species is the locally endemic plant species, *Verbascum hasbenii* (nationally CR), which qualifies the associated woodland habitats supporting this species as critical habitat.

The NG strategy for this species would require a phased approach similar to the NNL strategy for natural habitat, but instead addressing NG requirements for impacts on critical habitat involving the following steps:

- Step 1: quantify the estimated loss of critical habitat and separate into 'temporary' and 'permanent' loss. *Output: quantum of temporary and permanent critical habitat loss for Verbascum hasbenii.*
- Step 2: set targets and design measures to achieve NG for temporary loss of critical habitat through onsite habitat restoration for flora triggering critical habitat (i.e. *Verbascum hasbenii* at Harmancık WPP only). *Output: Compile a critical habitat restoration plan.*
- Step 3: design measures to achieve NG for permanent loss of critical habitat through compensation measures such as offsets, where required. Undertake necessary stakeholder consultation. *Output: compile a biodiversity offset strategy and plan.*

- Step 4: implement restoration and/or offset plan(s). *Output: implementation of restoration/offset activities and interventions.*
- Step 5: monitor and evaluate the success of restoration/offset interventions and activities and propose corrective actions where necessary based on an adaptive management approach. During this process, it will also be important to confirm the actual footprint of temporary/permanent loss through field surveys, which can then be used to update the quantum of losses and requirements as necessary. *Output: monitoring, evaluation, and adaptive response.*

Importantly, where biodiversity offsets are required to compensate for residual impacts to natural and/or critical habitat, under IFC PS6, the establishment of a biodiversity offset requires the following:

- that the project developer to identify a suitable offset approach and mechanism that considers ecosystems and their component biodiversity that is comparable in terms of values (size, quality, and function) to those impacted by the project (i.e. "like-for-like or better")
- to ensure that the offset is managed to deliver the required conservation outcomes; and
- that external experts with knowledge in offset design and implementation must be involved in the process of offset determination and implementation.

NOTE: Given that biodiversity offsets are still relatively new in terms of their conceptualization and implementation internationally, with consultants and implementers still dealing with many unknowns and complexities around offsets in general, it is recommended that an external biodiversity specialist be consulted on all matters concerning the need and desirability for offsets, and the preparation of any necessary offset strategies and plans.

An **offset feasibility study** would first need to be undertaken to provide the following information:

- an overview of the impacts on priority biodiversity (including ecosystems, natural habitat, critical habitat, species, ecosystem services);
- an overview of how the mitigation hierarchy has been followed in the Project design;
- a summary of the residual impacts from the Project on critical and natural habitats and quantification of those impacts using a d habitat hectares method (for example: Parkes, Newell, and Cheal, 2003³);
- the targets required to deliver biodiversity no net loss (NNL) and/or net gain (NG) objectives;
- an explanation of the preliminary offset design and strategy to achieve NNL/NG including possible options for doing so and the feasibility of these options;
- identification of potential delivery partners, and likely key stakeholders;

³ Parkes, David, Graeme Newell, and David Cheal. 2003. "Assessing the Quality of Native Vegetation: The 'Habitat Hectares' Approach." *Ecological Management & Restoration* 4 (s1): S29–38. Online at: <https://www.forest-trends.org/wp-content/uploads/imported/4assessing-quality-of-native-vegetation-d-parkes-pdf.pdf>

- identification of key roles and responsibilities and preliminary timeframes for delivering the actions set out in the offset strategy;
- outlines the next steps towards developing an offset implementation and management plan.

In the absence of a national biodiversity offset policy in Türkiye, it is recommended that the offset approach and strategy with good international practice as far as possible, particularly the principles, guidelines and methodology contained in the 'Biodiversity Offset Design Handbook' (BBOP, 2012⁴):

- offsets should be 'like-for-like' with trading only permitted within the same land class type;
- if 'like-for-like' is not possible, offsets should address the same features and habitats within the broader landscape area;
- environmental contributions for specific programs can be used to substitute for the direct management of biodiversity;
- incremental loss and fragmentation of biodiversity values is to be avoided;
- management of offset sites can be used to improve biodiversity values however this may not replace actions that are already funded;
- areas with existing or potential land uses that are likely to be in conflict with the objectives of biodiversity offsets will need to be avoided (mining, forestry leases);
- offsets to be located in close proximity to the impacted area as possible, such that the gains of offset mitigation are retained in the local area impacted and not transferred elsewhere;
- location of offsets in the landscape that facilitate connectivity with adjacent habitats are considered preferable;
- large offset sites that are connected to existing protected areas are also seen as preferable;
- sites similarly used by comparable ethnic groups sharing similar cultural values will be of preference;
- fairness and equity should be ensured for affected stakeholders; and
- offsets chosen should be permanent and ongoing in perpetuity.

Upon conclusion and acceptance of the offset feasibility study by lenders and other key stakeholders (e.g. conservation authorities), a detailed **Biodiversity Offset Management and Monitoring Plan (BOMMP)** would need to be developed that contains information regarding:

- Agreement on a final offset option;
- Select and agree on priority offset site(s);
- Agree on offset conditions;
- Baseline assessment of offset site(s) for opportunities (if required);
- Investigate offset implementation partner(s);
- Compile detailed financial costing;

⁴ BBOP. 2012. "Guidance Notes to the Standard on Biodiversity Offsets." Washington, D.C.: Business and Biodiversity Offsets Programme (BBOP). Online at: <https://www.forest-trends.org/publications/standard-on-biodiversity-offsets/>

- Investigate and clarify the legal instruments and arrangements for determination and agreement on securing the final offset areas, including delineation of the offset site, how the offset will be declared and designated in terms of Turkish Law;
- Understand the processes and roles of relevant government bodies and engage with them;
- Compile a detailed implementation plan with activities, roles, responsibilities and timeframes for delivering on the offset including short- and long-term management measures;
- Describe contractual arrangements with implementation partner(s);
- Agree on and finalize offset funding arrangements, as well as formulating a clear and transparent accounting and reporting approach and methodology;
- Compile Biodiversity Offset Monitoring & Evaluation Program;
- Implement offset as per BOMMP; and
- Monitor and evaluate offset.

7.4.2 NG STRATEGY FOR MIGRATORY BIRDS

For Harmancık, Ovacık, Akköy, Ihlamur and Uygur WPPs, several migratory bird species have been identified as possibly qualifying the EAAAs for birds as critical habitat (see Table 7-2).

TABLE 7-2 CRITICAL HABITAT QUALIFYING/TRIGGER SPECIES FOR WPPS

WPP	Critical Habitat Trigger Species
Harmancık	<ul style="list-style-type: none"> • Lesser Spotted Eagle (<i>Clanga pomarina</i>) • <i>Verbascum hasbenii</i> (endemic plant)
Ovacık	<ul style="list-style-type: none"> • Short-toed Snake-eagle (<i>Circaetus gallicus</i>) • Lesser Spotted Eagle (<i>Clanga pomarina</i>)
Akköy	<ul style="list-style-type: none"> • Dalmatian Pelican (<i>Pelecanus crispus</i>)
Ihlamur	<ul style="list-style-type: none"> • Lesser Spotted Eagle (<i>Clanga pomarine</i>)
Uygur	<ul style="list-style-type: none"> • Black Stork (<i>Ciconia nigra</i>)

Critical habitat in this case is not associated with traditional terrestrial vegetated habitat such as woodland or grassland, but rather the 'airspace' which the migrant bird species use to navigate through the region upon migration (*the EAAA defined in the CHA reports for birds was based on bird migration rather than physical habitat supporting resident species*). As the physical airspace cannot be simply replaced or offset as part of a traditional approach to NG, the NG strategy and approach for compensating for impacts (displacement/fatalities) to migrant bird species will be different. In this instance, traditional offset approaches to replacing, restoring, or creating physical habitat in the Project AoI would not be appropriate, so using habitat extent and condition as a proxy towards meeting NG requirements is not possible and an alternative approach is needed. In alignment with GN90 of IFC PS6 Guidance Note 6 then, *supporting additional opportunities to conserve critical habitat values may be used to obtain net gains in instances where a biodiversity offset is not part of the mitigation strategy*.

Authors such as Bennun *et al.* (2021⁵) recommend that options to address the impacts of wind energy projects on migratory species, and towards meeting NG requirements, should aim to tackle threats to species in areas where there are particular 'crunch points' along the migratory range such as at important stop-over sites (e.g. lakes or wetlands supporting waterbirds) and interventions targeting their breeding or wintering grounds and associated habitats.

In line with this approach towards identifying potential conservation opportunities beyond the Project area and connected with migratory species stop-over sites, breeding/wintering grounds and other supporting areas associated with their migratory routes/ranges; the key habitat requirements, major/key threats to each species and conservation action recommendations of the IUCN was first considered in order to identify NG opportunities for each species that are conservation-related (Table 7-3, over the page).

⁵ Bennun, L., van Bochove, J., Ng, C., Fletcher, C., Wilson, D., Phair, N., Carbone, G. (2021). Mitigating biodiversity impacts associated with solar and wind energy development. Guidelines for project developers.

TABLE 7-3 HABITATS, MAIN THREATS AND CONSERVATION ACTIONS NEEDED/PROPOSED FOR THE PROJECT CRITICAL HABITAT TRIGGER SPECIES BASED ON INFORMATION OBTAINED FROM THE IUCN

Species Name	Threat Status (global / national)	Regional Status	Management Objective	Associated Habitat for Project Site	Key Habitat (IUCN online database)	Main Threats (IUCN)	Conservation Actions Needed or Proposed (IUCN)
<i>Clanga pomarina</i> Lesser Spotted Eagle	LC / EN	Passage migrant	Net Gain	Airspace (during migration)	Moist woodland, forest edges	Renewable energy, powerlines (collisions), habitat loss, pollution, hunting/trapping	<ul style="list-style-type: none"> Identify key nesting areas and migratory roost sites and establish protected areas. Protect breeding and foraging habitats. Buffer zones around nest sites. Satellite tracking of individuals. Maintain traditional agricultural practices. Eagle-friendly forest management practices. Artificial nesting platforms. Insulation of overhead electric cables. Research key threats on migratory pathways and at wintering grounds. Monitor population numbers during migration.
<i>Ciconia nigra</i> Black Stork	LC / EN	Passage migrant	Net Gain	Airspace (during migration)	Old forests, marshes/rivers, grasslands	Habitat degradation, powerlines (collisions), water pollution	<ul style="list-style-type: none"> Retention of large older trees during forest management as nesting sites. Managing river quality as far as 20 km away from nesting sites. Protecting and managing feeding habitats. Improving food resources by establishing shallow artificial pools in grasslands or along rivers. Monitor breeding, migrating, wintering numbers, age composition and ecological changes at key sites. Sustainably manage rivers and small streams. Establish non-intrusion zones around nest locations. Bury powerlines or replace with more visible cable. Prevent poaching and overexploitation of fish.
<i>Circaetus gallicus</i>	LC / EN	Passage migrant /	Net Gain	Airspace (during migration)	Variety of habitats but always requires	Habitat loss, hunting/trapping,	<ul style="list-style-type: none"> No information.

Species Name	Threat Status (global / national)	Regional Status	Management Objective	Associated Habitat for Project Site	Key Habitat (IUCN online database)	Main Threats (IUCN)	Conservation Actions Needed or Proposed (IUCN)
Short-toed Snake-eagle		possibly resident		Possibly wooded habitat for resident species	some level of tree cover, especially for breeding	renewable energy, forestry	
<i>Pelecanus crispus</i> Dalmatian Pelican	NT / EN	Passage migrant	Net Gain	Airspace (during migration)	Freshwater wetlands, lakes, coastal lagoons, estuaries (during migration, large lakes are important stop-over sites)	Habitat loss, hunting/trapping, renewable energy, utility/service lines, over- fishing, water use and pollution	<ul style="list-style-type: none"> • Provision of breeding platforms. • Marking and dismantling powerlines. • Monitoring of breeding and wintering numbers and ecological changes at key sites. • Manage wetlands sustainably. • Bury powerlines or replace with more visible cables. • Prevent poaching and over- fishing.

Based on the review of the threats and recommendations of the IUCN regarding conservation actions for each species of bird, in the first instance the mitigation hierarchy approach will need to be followed, with measures designed to avoid or minimize impacts to these species. Given that direct impacts are likely to be associated with potential collisions and mortalities with wind turbines and overhead powerlines collisions/possible electrocution during operation (species of raptor and stork with related key risks being renewable energy and powerline collisions), measures to avoid or minimize collisions with the turbine and powerline infrastructure will be essential. At a minimum, this would require:

- Measures to reduce the risk of collision with turbines, aligned with GIP, such as developing and implementing an appropriate 'Shut-Down-On-Demand' (SDOD) system and protocol that considers the main periods of migration for target bird species.

In contrast to planned shut-down procedures that typically involves a blanket approach to shut down planned to cover certain periods or seasons of the year (e.g. migratory or breeding season when bird activity peaks), a SDOD protocol and system is based on real-time observations of bird activity at the WPP, which rely on one or more of the following approaches:

- Use of field observers (observer led SDOD);
- Image-based systems;
- Radar-assisted systems; and
- The use of AI software.

Each of these SDOD systems has its own unique pros and cons, and there are likely to be site-specific constraints and requirements that may favor one approach over another. It is therefore recommended that the different options be considered and screened for each WPP by developing a set of standard criteria (e.g. accuracy, dependability, cost, maintenance requirements, local constraints, etc.). This will assist towards developing a technical note on the type of system that could be applied for each WPP, considering alternatives and the advantage/disadvantages/constraints associated with each approach.

The most widely used method according to IFC, EBRD and KfW (2023) for implementing a SDOD system and protocol involves employing experienced observers strategically located at pre-planned vantage points around the wind power plant (WPP) to determine bird collision risk in real-time and inform the shutdown of specific turbines when birds approach rotor blades, restarting them once the birds are no longer at risk. These shutdowns are typically brief, lasting less than 30 minutes. In some cases, radar systems can be used to assist observers (radar assisted SDOD). In areas with intense flight activity, such as bird migration corridors, more turbines may be shut down for extended periods lasting several hours or more) when high activity is detected or anticipated. However, where there is potentially difficult terrain, visual obstructions, and weather conditions during certain periods of the year that could affect access, field observer based SDOD system may not be appropriate or practically implementable. This approach also requires an adequate number of highly experienced bird field surveyors, whose availability may limit the application of this approach. The approach may also not be appropriate for some priority species, for example if they are too small

or flight speed is too fast for them to be identified in time for turbines to be shut down before birds enter the collision risk zone.

In addition to observer-led SDOD, there are also several options involving automated systems that use camera and radar technology, focused on safeguarding larger bird species, which have been demonstrated to be effective and these are considered appropriate in some situations. Image-based systems (e.g. cameras mounted at nacelle height) and radar systems also have their value, and when paired with automated analysis through appropriate computer software can be easy to implement with decent results. However, such systems also have their disadvantages with respect to cost for example and limitations in terms of detection capability (e.g. ground-based radar systems work best for detecting larger raptors and large-bodied waterbirds, however radar systems can only distinguish between different size-classes of objectives and not between species of birds).

The most sophisticated of the automated systems typically combine imaging, artificial intelligence, and machine learning to detect target bird species and automatically trigger turbine shutdowns when necessary. Such systems can be expensive to implement, are still in their infancy and the efficacy of such systems remains still somewhat uncertain/unproven, pending further research).

Some of the available automated SDOD technology alternatives include:

- Camera technology:
 - DTBird (birds only - Uses a suite of daylight and/or thermal imaging cameras mounted on individual turbines or similar structures): Once targets are identified, the system can issue a warning sound or automatically shut down turbines, based on preset criteria (e.g. distance from turbine). Detection distance is related to bird size. Best-case scenario for a golden eagle (*Aquila chrysaetos*) is ~600 m during the day and ~200 m at night (Bennun et al., 2021).
 - IdentiFlight (birds only- Uses a suite of daylight and/or thermal imaging cameras mounted on individual turbines or similar structures): Imaging is linked to an algorithm to classify objects; has the potential to be species- specific. Fully integrated with Supervisory Control and Data Acquisition (SCADA) for automated shut down, no need for human involvement. Has an operational range of 1,000 m (Bennun et al., 2021).
- Radar technology:
 - Robin Radar Max (birds only- Uses radar to provide real- time detection and 3D tracking of birds): Has a ~15 km maximum detection distance with unrestricted line of sight. Shut down can be fully automated using predefined rules and has the potential to be species-specific. Expensive to purchase, at ~ >US\$ 500,000. Use may be restricted by national military or aviation regulations (Bennun et al., 2021).
 - STRIX Bird Track (birds and bats- A radar system to automatically detect and track individual birds or bats): Cannot identify individual species – can detect size class only. Has a detection range of up to 12 km, depending on target size. Shut down can be fully automated using predefined rules or manually controlled. Radar

use may be restricted by national military or aviation regulations. Has not been used in isolation, always in combination with observers (Bennun et al., 2021).

Measures to increase the visibility of overhead powerlines and insulate components that could present an electrocution risk to birds. Mitigation measures have been developed in several guidelines and best practices to reduce powerline collisions and electrocutions for birds across the world, including within EU territories⁶. These measures for overhead powerlines include:

Design measures to reduce collision risk:

- Design of transmission lines to reduce bird collisions is aimed at reducing the vertical spread of lines, increase the visibility of lines, and/or decreasing the span length.
- Enhance bird visibility with strategic placement of markers, including colored plastic balls on conductors, installation of flight diverters along the transmission line routes near natural forest/woodland habitats, and attaching diverters to grounding wires as per international good practice guidance. Provide deterrents at key positions along the transmission lines where visibility is poor and particularly where less disturbed, larger wooded areas such as woodland and forest habitats are encountered (e.g. line markers / flight diverters at 5-15m intervals where high levels of raptor activity has been recorded).
- Visual markers should be placed on ground wires. If the power line does not have ground wires, these devices should be placed on the conductors.
- Installing flight diverters along the entire transmission line length may not be feasible technically and financially, and in this case, it is recommended that a more pragmatic approach, such as the approach taken by 'LIFE ENERGY' . This approach considers monitoring of the powerline route and identifying areas of heightened bird collision risk that warrants risk mitigation through increasing powerline visibility to birds. In general, the installation of anti-collision measures should be prioritized in the following cases:
 - Power lines located less than 1 km from wetlands, urban solid waste landfill sites, sites where dead animals and their remains are stored, or crops, since these areas attract large numbers of birds that go there to feed each day;
 - Power lines within a 1.5 km radius of nesting platforms used by priority species (e.g. vultures, eagles) in particular in mountainous or wooded regions or near rocky ridges;
 - Power lines within a 1.5 km radius of nesting sites of colonial birds such as herons, storks and other waterbirds and certain raptors;
 - Power lines within a 1.5 km radius of nest boxes used by gregarious birds such as herons, storks, cranes, colonial raptors, etc;
 - Power lines on which threatened or gregarious species build their nests (certain raptors and storks, for example);

⁶ Wildlife and power lines: Guidelines for preventing and mitigating wildlife mortality associated with electricity distribution networks' – IUCN / Martin Martin et al. (2022),

Electrocutions & Collisions of Birds in EU Countries: The Negative Impact & Best Practices for Mitigation' - Raptor Protection of Slovakia (2021) / NABU,

Mitigating biodiversity impacts associated with solar and wind energy development: Guidelines for project developers' – Bennun et al. (2021)

- Power lines located in areas with a large number of breeding or wintering steppe birds (e.g. bustards, houbaras), as well as in areas that these species use as corridors;
- Power lines crossing watercourses that act as corridors for seabirds and migratory birds;
- Power lines that cross bird flyways in migratory corridors or bottlenecks, or in other situations in which the topography gives rise to risky situations;
- Power lines within a 1 km radius of locations where bird collisions have already been reported. These lines should also be prioritized in the search for mortality black spots.

Design measures to reduce electrocution risk for distribution line networks with voltages of 132 kV and below:

- Installation of insulating elements and deterrent devices. Implement safe distribution lines, with insulation and spacing of conductors that eliminate electrocution risk for birds.
- Use of insulated and twisted conductors, so that the risk of electrocution is reduced to zero. Twisted conductors are only viable for lines with a voltage below 35 kV. For higher voltages, up to 132 KV, it is possible to use separate insulated conductors.
- Use of supports with safe crossarm configurations. This is a permanent measure consisting of installing crossarm configurations that minimize electrocution risk. Where supports are known to cause electrocutions, total or partial replacement of the crossarm in order to make it safe is the only effective and permanent solution if the measures described above are not possible.
- The basic characteristics of these safe configurations must comply with minimum safety distances. Whenever possible, it is highly recommended to use supports with suspended insulators that move the phases away from potential perching areas.

Several measures are also recommended for preventing birds from perching or nesting on powerline towers and infrastructure, the purpose being to stop birds from using the pylons for building their nests or perching, or at least prevent nesting in the higher risk zones:

In general, it is acknowledged that anti-perching devices typically tend to be less effective than insulation systems, so insulation should be prioritized in all cases generally to minimize electrocution risk. However, where anti-perching or anti-nesting systems are used, these should ideally be installed in conjunction with insulation systems, especially if birds have other places to perch that may be dangerous. The most appropriate anti-perching solution should in each case must be considered in connection with proper installation because improper installations could increase the electrocution risk.

- Tubular towers with tapered tops are recommended over lattice towers, in order to make it difficult for birds to land, perch, rest and nest on towers. To prevent nesting, it is common to combine anti-perching devices with the provision of alternative artificial nests in nearby locations (providing the deterrent and the alternative nesting site is key).
- Installing elements that discourage or prevent birds from perching on dangerous parts (anti-perching devices). Metal anti-perching or anti-nesting systems should

be avoided, particularly if they are upright and permanent as these can injure birds with their projecting parts and/or sharp edges.

Operational maintenance measures towards reducing bird collision risks:

- Maintain low (short) vegetation cover within the powerline servitude/corridor, in order to avoid creating bird perching points and attracting prey animals for raptors.
- Remove any carcasses of livestock and other large animal (such as feral species) identified within the powerline servitude/corridor and any adjacent areas (i.e. within 48 hours of discovery), to avoid attracting scavenger bird species that could pose a risk of collision with the powerline.

However, these mitigation measures in themselves will not contribute towards meeting a biodiversity NG objective for the critical habitat qualifying species, as they simply intend to mitigate risk of impact, ideally in the direction towards non-significant residual effects on birds qualifying as critical habitat (i.e. 'No Net Loss' of biodiversity).

In alignment with the approach set out in GN90 of IFC PS6 Guidance Note 6, the Project's involvement in supporting or contributing to additional opportunities to conserve critical habitat values is proposed to obtain net gains in this instance, where a biodiversity offset is either not part of the Project mitigation strategy (or in this case, also not appropriate for the CH species given the context – risk of collision/disturbance/displacement of migratory birds during passage).

EXAMPLES OF SUCH CONSERVATION OPPORTUNITIES ARE INCLUDED IN TABLE 7-4 WHICH FOLLOWS, AND IT IS RECOMMENDED THAT THESE BE EXPLORED FURTHER DURING THE DEVELOPMENT OF DETAILED NG STRATEGIES AND SITE-SPECIFIC BAPS FOR THE WPPS INVOLVING CRITICAL HABITAT LINKED TO MIGRATORY BIRD SPECIES.

Table 7-5 contains a list of KBAs/IBAs in close proximity to the WPPs which can be considered individually or collectively in terms of conservation opportunities linked to the CH trigger species described.

A stepwise approach towards developing the NG strategy for migratory bird species that trigger critical habitat is recommended, and which will need to be applied to each relevant WPP:

- Step 1: complete additional baseline bird surveys during 2024 and use the information to update the Critical Habitat Assessments (CHAs) where necessary and confirm trigger species;
- Step 2: develop a detailed NG strategy for migratory birds qualifying as critical habitat based on the updated CHAs and biodiversity impact assessments to be informed by 2024 field data being obtained and using the information presented in Table 7-4 and 7-5 of the BAPF;
- Step 3: undertake a Collision Risk Assessment (CRA) based on collision risk modelling using the bird VP survey data to be obtained in 2024;
- Step 4: set targets and thresholds for critical habitat trigger species;
- Step 5: develop an appropriate Shut-Down-On-Demand protocol and system (where required, depending on updated CHA and CRA) to mitigate bird collision risks, particularly during migratory periods, supported by the outputs of the Collision Risk Assessment;

- Step 6: undertake post-construction fatality monitoring (PCFM) and annual fatality estimations to verify and quantify actual impacts on critical habitat bird species;
- Step 7: adapt mitigation and update the NG strategy for CH species based on the outcomes of PCFM during the first 2 years of operation at least;
- Step 7: implement and monitor the success of additional conservation actions for critical habitat trigger species of migratory birds according to the NG strategy developed for each WPP (where critical habitat is triggered by migratory bird species).

TABLE 7-4 POSSIBLE NG OPPORTUNITIES TO BE EXPLORED FOR MIGRATORY BIRDS TRIGGERING CRITICAL HABITAT

Critical Habitat Trigger Species	WPPs	Possible NG Opportunities to be Explored Further
Lesser Spotted Eagle (<i>Clanga pomarina</i>)	Harmancık, Ovacık, Ihlamur	<ul style="list-style-type: none"> • Approach management authorities to support with interventions aimed at protecting breeding/foraging habitats for <i>C. pomarina</i>, focusing on key passage areas for migratory birds, such as the 'Çanakkale Strait' ('Dardenelles Strait') and 'Bosphorus crossing'. • Engage with BirdLife's partner in Türkiye, Doğa Derneği, to investigate opportunities to support with existing or new bird conservation projects (focus on site conservation within the 'Biga Mountains' and 'Kaz Mountains' KBAs and IBAs for example). • Consider working with local/regional NGOs (including Doğa Derneği) to support with conservation/educational programs supporting local communities and farmers with addressing the impacts of hunting of Eagles. • Supporting with funding long-term regional raptor monitoring programs. • Support with funding research into threats on migratory species and pathways in the region.
Short-toed Snake-eagle (<i>Circaetus gallicus</i>)	Ovacık	<ul style="list-style-type: none"> • Same as above for <i>C. pomarina</i>. • Note however that for Ovacık, the CHA report mentions that it is not clear from the national EIA whether species activity pertained to migratory passage or repeated resident activity. The additional baseline bird surveys to be completed in 2024 will need to shed further light on the status of this bird, and if it is in fact a resident, the NG strategy may need to be relooked at to include habitat conservation measures near the WPP for this species.
Dalmatian Pelican (<i>Pelecanus crispus</i>)	Akköy	<ul style="list-style-type: none"> • Approach management authorities to support with interventions aimed at protecting or enhancing breeding/foraging habitats as well as conserving important stop-over habitats (provision of breeding platforms for example), wetland protection initiatives. • Engage with BirdLife's partner in Türkiye, Doğa Derneği, to investigate opportunities to support with existing or new waterbird conservation projects [focus on site conservation targeting the 'Büyük Menderes Delta', 'Bafa Lake', and 'Akbuk Coast' KBAs and IBAs (see Table 7-5), consider projects aimed at conserving important stop-over habitats including inland lakes and food resources for birds such as fish]. • Supporting with funding long-term regional migratory waterbird monitoring programs. • Support with funding research into threats on migratory species and pathways in the region.
Black Stork (<i>Ciconia nigra</i>)	Uygar	<ul style="list-style-type: none"> • Approach management authorities with interventions aimed at protecting or enhancing breeding/foraging habitats associated with rivers, marshes, grassland and forests (provision of improved food resources by establishing

Critical Habitat Trigger Species	WPPs	Possible NG Opportunities to be Explored Further
		<p>artificial pools in grasslands, for example) and supporting projects to improve the management of river water quality.</p> <ul style="list-style-type: none"> Engage with BirdLife's partner in Türkiye, Doğa Derneği, to investigate opportunities to support with existing or new waterbird conservation projects / wetland protection initiatives (see Table 7-5). Supporting with funding long-term regional migratory bird monitoring programs. Support with funding research into threats on migratory species and pathways in the region.

TABLE 7-5 LIST OF KBAS AND IBAS WITH POSSIBLE CONSERVATION OPPORTUNITIES FOR THE PROJECT TO CONSIDER TOWARDS A NG STRATEGY

Site Name	Designation	Description	Pressures/Threats to Key Biodiversity	Conservation Opportunities which the Project could consider
Kaz Dağları ('Kaz Mountains')	KBA, IBA	Inland mountainous region, with IBA trigger species including breeding European Honey-buzzard (<i>Pernis apivorus</i>) and Krueper's Nuthatch (<i>Sitta krueperi</i>)	<ul style="list-style-type: none"> Agricultural expansion and intensification. Energy production. Mining. Residential/commercial development. Information sourced from <i>BirdLife International datazone</i>. 	<ul style="list-style-type: none"> Probably limited opportunities for the Project's CH trigger species (low priority for the Project). Opportunity to contribute/support the Buğday 'Association for Supporting Ecological Living', which is constructing an Ecological Life Practice and Education Center in the Küçükkuyu town located in the southern part of the IBA. Stakeholders to consult with: Doğa Derneği, TEMA (The Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats), Çanakkale Environmental Volunteers Association; Buğday Association for Supporting Ecological Living; Mehmetalan Village Tourism Development and Beautification Cooperative.
Çanakkale (Dardanelles) Strait	KBA, IBA	Important marine and coastal passage for migrants and coastal birds,	<ul style="list-style-type: none"> Energy production and mining. Renewable energy. 	<ul style="list-style-type: none"> Support BirdLife (Doğa Derneği) with Mediterranean flyway project (includes conservation of key

Site Name	Designation	Description	Pressures/Threats to Key Biodiversity	Conservation Opportunities which the Project could consider
		including Yelkouan Shearwater (<i>Puffinus yelkouan</i>).	<ul style="list-style-type: none"> A management plan exists but it is out of date or not comprehensive. Substantive conservation measures are being implemented but these are not comprehensive and are limited by resources and capacity. <i>Information sourced from BirdLife International datazone.</i> 	<p>sites, supporting development of local conservation groups, data synthesis on illegal hunting and reducing the impact of energy infrastructure).</p> <ul style="list-style-type: none"> Assist with funding the development of an updated management plan. Stakeholders to consult with: Doğa Derneği, Çanakkale Representative Office, Çanakkale Environmental Volunteers Association, Nature Culture and Life Society in Urfa and Hatay Nature Conservation Society.
Bosphorou s	KBA	Major migratory bottleneck for storks and raptors. Includes important forested areas providing breeding habitat.	<ul style="list-style-type: none"> Rapid urban and industrial expansion. Mining. Road construction. Raptor persecution. A management plan exists but it is out of date or not comprehensive. Substantive conservation measures are being implemented but these are not comprehensive and are limited by resources and capacity. <i>Information sourced from BirdLife International datazone.</i> 	<ul style="list-style-type: none"> Support conservation of forested habitats either side of the strait, which are crucial to preserving raptor roosting sites. Assist with funding the development of an updated management plan. Support BirdLife (Doğa Derneği) with Mediterranean flyway project (includes conservation of key sites, supporting development of local conservation groups, data synthesis on illegal hunting and reducing the impact of energy infrastructure). Stakeholders to consult with: Doğa Derneği (offices in Istanbul), Nature Culture and Life Society in Urfa and Hatay Nature Conservation Society.
Bafa Lake	KBA, IBA, national protected area	Slightly saline inland lake and important for breeding waders and large numbers of wintering	<ul style="list-style-type: none"> Reductions in inflow have occurred as a result of levee and dam construction 	<ul style="list-style-type: none"> Habitat conservation/improvement for waterbirds including Dalmatian Pelican, one of the Projects' CH trigger species.

Site Name	Designation	Description	Pressures/Threats to Key Biodiversity	Conservation Opportunities which the Project could consider
		waterbirds, including Dalmatian Pelican (<i>Pelacanus crispus</i>).	<ul style="list-style-type: none"> and abstraction for irrigation. Fish stocks have declined as a result of over-fishing and the lake/river connection being severed. A large housing complex is planned to the south of the lake. Illegal hunting is frequently observed. A management plan exists but it is out of date or not comprehensive. Some limited conservation initiatives are in place. <i>Information sourced from BirdLife International datazone.</i> 	<ul style="list-style-type: none"> Projects aimed at curbing illegal hunting practices. Assist with funding the development of an updated management plan. Stakeholders to consult with: Doğa Derneği, Aydın Provincial Directorate of Environment and Forestry; Nature Association; Aegean Association for the Conservation of Natural Life (EgeDoğa).
Büyük Menderes Delta	Protected area, KBA, IBA	Important for breeding and wintering waterbirds, including Dalmatian Pelican (<i>Pelacanus crispus</i>).	<ul style="list-style-type: none"> Irrigation projects, including 13 reservoirs, have been and are being developed on the Büyük Menderes river with severe consequences for large tracts of natural habitat. Industrial and untreated urban waste enters the lagoons via the river, and, along with water-level fluctuations and over-fishing, has caused fisheries to collapse. There is considerable pressure to build holiday homes. 	<ul style="list-style-type: none"> Habitat conservation/improvement for waterbirds including Dalmatian Pelican, one of the Projects' CH trigger species. Projects aimed at improving river water quality entering the lagoons. Opportunity to contribute towards ongoing environmental education programs supported by the Nature Association and Doğa's 'Nature School'. Stakeholders to consult with: Doğa Derneği, Aydın Provincial Directorate of Environment and Forestry; Nature Association; Aegean Association for the Conservation of Natural Life (EgeDoğa).

Site Name	Designation	Description	Pressures/Threats to Key Biodiversity	Conservation Opportunities which the Project could consider
			<ul style="list-style-type: none"> Information sourced from BirdLife International datazone. 	
Akbük Coast/Bay	KBA	Coastal area for conserving Mediterranean monk seal.	<ul style="list-style-type: none"> Seal attacks. Over0-fishing. Pollution (marine). 	<ul style="list-style-type: none"> Probably limited opportunities for the Project's CH trigger species (low priority for the Project).
Mahal Hills	KBA, IBA	Important marine and coastal area for breeding and resident coastal birds, including Yelkouan Shearwater (<i>Puffinus yelkouan</i>).	<ul style="list-style-type: none"> Energy production. Mining and quarrying. No management plan in place. Some limited conservation initiatives in place. Information sourced from BirdLife International datazone. 	<ul style="list-style-type: none"> Probably limited opportunities for the Project's CH trigger species (low priority for the Project). Assist with funding the development of an updated management plan.

7.5 MANAGEMENT OF PRIORITY ECOSYSTEM SERVICES

For ecosystem services, IFC PS6 focuses on the identification and management of potential impacts to 'priority ecosystem services'. At this stage, it is not known whether any of the WPPs involve impacts on priority ecosystem services, and as a first step an assessment would be required to identify and establish this.

Where priority ecosystem services are identified and have the potential to be negatively impacted, and where Enerjisa has control/influence over the ecosystems and processes potentially affecting these services, the following will need to be implemented:

- Avoid adverse impacts where possible;
- Implement mitigation aimed at minimizing impacts and maintaining the value and functioning of priority ecosystem services where avoidance is not possible.

7.6 MANAGEMENT OF INVASIVE ALIEN SPECIES

Invasive Alien Species (IAS) concerns both plants and animals, and these are known to have far-reaching detrimental effects on biodiversity through their competitive influence on native / indigenous wildlife and propensity to change ecological conditions and processes within natural ecosystems and habitats, at various scales depending on the level of invasion / infestation.

IFC PS6 requires projects and activities to manage the potential introduction of IAS and the spread of existing IAS at a site as follows:

- Identify and assess risks of IAS introductions/spread;
- Mitigate the introduction of IAS;
- Control the spread of established IAS;

- Eradicate established IAS from natural habitats where possible.

7.7 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.

The IFC Performance Standards acknowledge 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. 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, IFC PS6 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 critical habitat particularly, a long-term biodiversity monitoring and evaluation program is required to be integrated into the company's ESMS.

7.8 LIFE-CYCLE APPROACH

Aligned with the IFC PS, the BAPF takes a life-cycle approach to the WPP projects, addressing all phases of the projects (entire life cycle) from design/planning, construction, commissioning, operation, decommissioning, closure and (where applicable) post-closure. For the sake of simplicity and given the nature of the WPP development projects, this has been taken to include construction, operation and decommissioning phases.

Whilst the existing ESIA's for the WPP projects address construction and operational phase impacts and mitigation for these phases, decommissioning phase impacts are not addressed explicitly. That being said, for WPPs the decommissioning phase impacts and risks on biodiversity are likely to be fairly similar to the construction phase in many respects, possibly less significant as the intensity and duration of activities and impact is likely to be less. Much of the mitigation for the construction phase will be similar for the decommissioning phase, however there will be some differences. It is advisable that these be addressed within a comprehensive Biodiversity Management Plan (BMP) that covers construction, operation, and decommissioning.

Decommissioning impacts and mitigation recommendations should also be reviewed and updated and the components of the BMP for the decommissioning phase updated as necessary prior to decommissioning being scheduled (recommended that this be done 1 year prior to decommissioning), based on the following:

- Review of decommissioning phase schedule, timing and activities;
- Survey to confirm the most sensitive biodiversity receptors and status quo of the environment (updated baseline) as conditions at the site can change significantly between the construction phase and decommissioning phase several decades later;
- Review and update risks and impacts based on the re-survey to confirm the status quo/baseline;
- Review and update decommissioning phase mitigation measures and the components of the BMP that apply to decommissioning.

7.9 CUMULATIVE IMPACTS

Cumulative impacts associated with the various WPPs (in relation to other development projects as well) will still need to be evaluated, as it is understood that this is currently missing from the ESIA's for the various WPPs.

IESC and the Project lenders have requested that the nine WPPs (subprojects of one single 'Project') undertake a combined project-level cumulative collision risk assessment, once the updated bird VP survey data becomes available to run a suitable collision risk model.

In addition to this quantitative assessment of collision risk, it is also recommended that a Cumulative Impact Assessment (CIA) be undertaken for the overall project (including all nine WPP sub-projects) on a regional basis.

Cumulative Impact Assessment (CIA) is a standard requirement for projects where cumulative effects are likely to result, and this is reflected in the IFC PS. The CIA will need to be undertaken at a regional level for the nine WPPs inclusively, as well as considering other relevant projects, according to the IFC PS requirements (see information box below) and in accordance with the the IFCs '*Good Practice Handbook: Cumulative Impact Assessment and Management*' (IFC, 2013), where IFC suggests that 'good practice' requires that, at a minimum, project sponsors assess whether their development may contribute to cumulative impacts on VECs (Valued Social and Environmental Components) and/or may be at risk from cumulative effects on VECs they depend using a six-step process.

Since the CIA will be dependent on the ESIA and CHA reports developed for each WPP (which will be updated following the completion of additional studies), the CIA will need to be completed at the stage once ESIA and CHA reports have been updated and finalized. Also, the findings of the CIAs may recommend certain mitigation measures to manage cumulative impacts, and the BAPF and individual BAPs for sites will then also need to be reviewed and updated at this stage in future where required, to reflect any actions or mitigation / management recommended in the CIAs that apply to biodiversity.

Information Box. CIA according to IFC PS

IFC's Performance Standard 1 (PS1):

- Assessment and Management of Environmental and Social Risks and Impacts does not expressly require private sector clients to undertake a CIA, in paragraph 11 it states that the impact and risk identification process "*will take into account the findings and conclusions of related and applicable*

plans, studies, or assessments prepared by relevant government authorities or other parties that are directly related to the project and its area of influence”, including “master economic development plans, country or regional plans, feasibility studies, alternatives analyses, and cumulative, regional, sectoral, or strategic environmental assessments where relevant.”

- Furthermore, footnote 17 states, “the client can take these into account by focusing on the project’s incremental contribution to selected impacts generally recognized as important on the basis of scientific concern or concerns from the Affected Communities within the area addressed by these larger scope regional studies or cumulative assessments.”

Performance Standard Guidance Note 1 (GN1):

- In paragraph GN38, states “in situations where multiple projects occur in, or are planned for, the same geographic area...it may also be appropriate for the client to conduct a CIA as part of the risks and impacts identification process”.
- In paragraph GN41, it recommends that this assessment should (a) “be commensurate with the incremental contribution, source, extent, and severity of the cumulative impacts anticipated,” and (b) “determine if the project is incrementally responsible for adversely affecting an ecosystem component or specific characteristic beyond an acceptable predetermined threshold (carrying capacity) by the relevant government entity, in consultation with other relevant stakeholders.”

7.10 ADDRESSING GAPS IN EXISTING INFORMATION

Importantly, several obvious gaps in the ESIA were identified through this review of the information, which have a bearing on the management of biodiversity and which the BAPF actions seek to address also. IESC has advised that rather than revisiting the ESIA once disclosed, a more pragmatic approach would be to update the individual biodiversity assessments using the additional biodiversity data being collected in 2024.

8. BIODIVERSITY MANAGEMENT ACTIONS

Based on the biodiversity management priorities (see Chapter 6) and the overall strategy towards biodiversity management for the WPP project (see Chapter 7), a high-level action plan has been developed separately for:

- WPPs that are not yet operational; and
- The single operational WPP.

These action plans are appropriately high-level, with sufficient information and detail to inform the development of individual BAPs for each WPP, which will need to be more detailed and site-specific of course.

A single combined action plan (Table 8-1) was developed for WPPs that are not yet operational, as for all these WPPs there were generally similar biodiversity receptors, risks and impacts, which does not warrant the preparation of separate high-level actions plans. Where there are slight differences between WPP sites (for example several WPPs are not associated with critical habitat), this is reflected in Table 8-1.

A separate action plan (Table 8-2) has been developed for the operational WPP as this site is now operational and many of the actions (e.g. pertaining to the pre- and during- construction phase) are no longer relevant or possible to implement retroactively for the now operational site. Where it is possible still to implement actions during operation and/or retroactively, these measures are included in the action plan table.

In addition, the following guide has been developed to assist the reader in interpreting the high-level action plans:

- 1. Actions:** The first column indicates the actions recommended in the high-level action plan.
- 2. Category:** Several categories of actions are presented as follows:
 - a. Enabling action:** These actions are fundamental for kickstarting or facilitating biodiversity conservation efforts within the project. They can involve obtaining necessary permits, licenses, or approvals, undertaking further surveys or analysis as well as developing supplementary management/monitoring plans where necessary.
 - b. Management action:** actions involving the management or mitigation of impacts/risks in accordance with the mitigation hierarchy: avoid, minimize, restore, offset. Typically involves the implementation of a plan, program or specific intervention type.
 - c. Monitoring action:** an action requiring monitoring of some sort to be undertaken (for example to evaluate the success of implementation of an action or management intervention).
- 3. Relevance to the Project:** This column indicates whether the action is relevant to the project (indicated with a 'Yes') or whether it remains 'uncertain'.

Actions categorized as "uncertain" require further assessment or information gathering to determine their necessity or feasibility within the project context. These actions often involve potential uncertainties regarding their impact or the need for additional measures. For example, Enerjisa has commissioned several additional (supplementary

surveys) of habitats, flora, and fauna, to improve the biodiversity baseline for each WPP, and it is understood that the findings of these surveys will be used to update the ESIA reports, and where necessary, the BAPF in future. Several of the proposed actions in the BAPF are therefore considered 'uncertain' as to their relevance to several of the WPPs where surveys are ongoing, and as such should be considered 'preliminary'. These actions should be reviewed and updated as necessary at a point in the future once the field surveys have been completed and ESIA's updated accordingly.

- 4. Further Actions or Steps Required:** Provides detail on what are the further actions or steps required to implement the action. This is particularly important for actions regarded as 'uncertain' and where further steps are required to understand actual relevance.
- 5. Responsibility:** Indicates who is responsible for implementing the action (may require multiple parties).
- 6. Timeframe:** Indicates generally the timeframe for implementing the action (i.e. pre-construction, during construction, after construction, during operation, during decommissioning).
- 7. Implementation schedule:** Provides further information on when implementation of the action is expected to occur.

TABLE 8-1 HIGH-LEVEL ACTION PLAN FOR WPPS THAT ARE NOT YET OPERATIONAL

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
1 PROTECTED AREAS & INTERNATIONALLY RECOGNISED AREAS (collectively termed 'designated areas')							
1.1 Obtain all necessary permits/licenses to operate within a designated area, where relevant.	Enabling action	No	<ul style="list-style-type: none"> None of the WPPs that are not yet operational are located within or near protected areas. No permitting process in Türkiye for development within KBAs. 	n/a	n/a		
1.2 Review any management plans and conservation objectives for the protected area/internationally recognized areas.	Enabling action	Yes	<ul style="list-style-type: none"> Where available, review the conservation aims/objectives for any KBAs overlapping. 	Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
1.3 Undertake relevant stakeholder consultation, if required.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> Engage with relevant stakeholders such as protected areas managers and local communities on issues with regards to development affecting designated areas, where relevant. 	Applicant / Developer Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
1.4 Align the Project with the conservation aims/objectives of the designated areas.	Enabling action	Uncertain (see 1.3 above)	<ul style="list-style-type: none"> Promote or enhance conservation aims/objectives of the Protected Area or Internationally Recognized Areas, where relevant, through developing measures to manage biodiversity values and documenting these within a Biodiversity Management Plan (BMP). 	Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
1.5 Implement measures to manage biodiversity values in alignment with the conservation aims/objectives of the designated areas.	Management action	Uncertain (see 1.3 above)	<ul style="list-style-type: none"> Implement the relevant measures as per the BMP (see 1.4 above). 	Applicant / Developer Contractor / EPC	<i>During project implementation (construction, operation, decommissioning)</i>		
2 NATURAL HABITAT							
2.1 Take necessary actions to avoid or minimise the loss of natural habitat.	Management action	Yes	<ul style="list-style-type: none"> Identify and map natural habitat in the Project AoI using GIS and use this to overlay the development layout plan. Implement the mitigation hierarchy of controls to avoid or minimise the loss of natural habitat, by locating permanent and temporary structure outside of identified natural habitats as far as possible. 	Applicant / Developer Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
2.2 Identify and quantify potential loss of natural habitat due to the Project in terms of habitat hectares (or 'hectare equivalents').	Enabling action	Yes	<ul style="list-style-type: none"> Identify and map natural habitat in the Project AoI using GIS and use this to overlay the development layout plan and quantify potential loss of natural habitat due to the Project. Assess / estimate the condition of natural habitat. Express natural habitat loss in terms of habitat hectares (or 'hectare equivalents', which is a combination of extent in hectares weighted according to habitat condition rating). 	Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
2.3 Develop a strategy and plan to achieve No Net Loss (NNL) of biodiversity for residual impacts on natural habitats, where relevant.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> Confirm requirements based on action 2.2 above. Align measures with the mitigation hierarchy, taking into account actions to avoid, minimise fragmentation of habitats, onsite restoration and biodiversity offsets where necessary. Develop a strategy and plan to achieve No Net Loss (NNL) of biodiversity for residual impacts on natural habitats. This will likely focus on measures to protect, conserve and/or enhance/restore the <i>Pinus nigra</i> woodland habitats, selecting appropriate passive and/or active restoration techniques and species mixtures based on site ecological conditions and habitat/plant species requirements. 	Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
			<ul style="list-style-type: none"> ➢ Include measures in the restoration plan for temporary areas disturbed by construction, which will be restored post-construction to a realistic state. ➢ Allow for decommissioning phase activities supporting post-closure habitat restoration and rehabilitation measures. ➢ Identify strategic locations for habitat restoration and wildlife corridor restoration initiatives to reconnect fragmented habitats and promote improved landscape connectivity. ➢ Identify habitat enhancement measures such as planting native vegetation, installing wildlife crossings, and creating buffer zones to mitigate habitat fragmentation effects. ➢ Include a plan to monitor success of NNL strategy, including indicators and metrics based on habitat. ➢ Include or reference the NNL plan/strategy in the BMP. 				
2.4 Implement the NNL strategy and plan for natural habitat, where relevant.	Management action	Uncertain (see 2.3 above)	<ul style="list-style-type: none"> ➢ Implement measures to minimise, restore, compensate for natural habitat impacts towards meeting NNL, where relevant. ➢ Implement habitat restoration and/or biodiversity offsets (as relevant) based on the NNL strategy and plan. 	Contractor / EPC Applicant / Developer	<i>During implementation/operational phase</i>		
2.5 Monitor and report on the success of implementation of the NNL strategy and plan for natural habitat, where relevant.	Monitoring action	Uncertain (see 2.3 above)	<ul style="list-style-type: none"> ➢ Implement monitoring plan and report on success and regular intervals defined in said plan. 	Biodiversity expert Applicant / Developer	<i>During implementation/operational phase</i>		
3a CRITICAL HABITAT: Flora (relevant to Harmancik WPP only*)							
3.1 Take necessary actions to avoid or minimise the loss of critical habitat for flora identified in the critical habitat assessment, as relevant.	Management action	Harmancik WPP only*	<ul style="list-style-type: none"> ➢ Identify and map critical habitat for qualifying species (<i>Verbascum hasbenii</i>) in the Project AoI using GIS and use this to overlay the development layout plan. ➢ Implement the mitigation hierarchy of controls to avoid or minimise the loss of critical habitat, by locating permanent and temporary structure outside of identified critical habitat as far as possible. 	Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
3.2 Identify and quantify potential loss of critical habitat linked to fauna due to the Project in terms of habitat hectares (or 'hectare equivalents'), as relevant.	Enabling action	HarmancikWPP only*	<ul style="list-style-type: none"> ➢ Identify and map critical habitat for qualifying species (<i>Verbascum hasbenii</i>) in the Project AoI using GIS and use this to overlay the development layout plan and quantify potential loss of critical habitat due to the Project. ➢ Assess / estimate the condition of critical habitat. ➢ Express critical habitat loss in terms of habitat hectares (or 'hectare equivalents', which is a combination of extent in hectares weighted according to habitat condition rating). 	Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
3.3 Develop a strategy and plan to achieve Net Gain (NG) of biodiversity for residual impacts on critical habitat for flora, where relevant.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> ➢ Confirm requirements based on action 3.2 above. ➢ Develop a strategy and plan to achieve Net Gain (NG) of biodiversity for residual impacts on natural habitats. ➢ Align measures with the mitigation hierarchy, taking into account actions to avoid, minimise fragmentation of critical habitats, onsite restoration and biodiversity offsets where necessary. 	Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
			<ul style="list-style-type: none"> ➤ Develop a robust and appropriate long-term monitoring plan to monitor success of NG strategy, including indicators and metrics based on habitat and critical habitat triggering species. ➤ Include or reference the NG plan/strategy in the BMP. 				
3.4 Implement the NG strategy and plan for critical habitat for flora, where relevant.	Management action	Uncertain (see 3.3 above)	<ul style="list-style-type: none"> ➤ Implement measures to minimise, restore, compensate for critical habitat impacts towards meeting NG, where relevant. ➤ Implement habitat restoration and/or biodiversity offsets (as relevant) based on the NG strategy and plan. 	Contractor / EPC Applicant / Developer	<i>During implementation/operational phase</i>		
3.5 Monitor and report on the success of implementation of the NG strategy and plan for critical habitat, where relevant.	Monitoring action Management action	Uncertain (see 3.3 above)	<ul style="list-style-type: none"> ➤ Implement monitoring plan and report on success and regular intervals defined in said plan. ➤ Use monitoring results to adapt measures/actions where required and implement adapted measures as necessary. 	Biodiversity expert Applicant / Developer	<i>During implementation/operational phase</i>		
3b CRITICAL HABITAT: Migratory birds (Harmançik, Ovacik, Ihlamur and Uygar WPPs only*)							
3.6 Develop NG strategy for migratory bird species that qualify as critical habitat, where relevant.	Enabling action	Possible but requires further verification following further data collection during 2024	<ul style="list-style-type: none"> ➤ Confirm critical habitat trigger species (pending updates to the Critical Habitat Assessment (CHA) report following additional data collection during 2024). ➤ Undertake Collision Risk Assessment (CRA) to estimate collision and mortality risk for target species. ➤ Verify that critical habitat trigger species are associated with each relevant WPP and there is a risk of residual impact on species based on the CRA, justifying the need for a NG approach for these species. ➤ Align measures with the mitigation hierarchy, taking into account actions to avoid or minimise potential collisions and mortalities with wind turbines and overhead powerlines collisions/possible electrocution during operation. Measures to reduce the risk of collision with turbines, aligned with GIP, such as developing and implementing an appropriate 'Shut-Down-On-Demand' (SDOD) system and protocol that considers the main periods of migration for target bird species. Measures to increase the visibility of overhead powerlines and insulate components that could present an electrocution risk to birds. ➤ Consult with relevant stakeholders (i.e. Doğa Derneği) concerning conservation opportunities and possible interventions for KBAs/IBAs identified as potential locations for actions (refer to Table 7-5 for detailed information on KBAs/IBAs and potential stakeholders). ➤ Informed by engagement with key relevant stakeholders, develop a detailed strategy and plan to achieve Net Gain (NG) of biodiversity for residual impacts to migratory birds that qualify as critical habitat, for each WPP. Refer to Tables 7-4 and 7-5 for NG opportunities to explore further. ➤ Develop a robust and appropriate long-term monitoring plan to monitor success of the NG strategy, including indicators and metrics based on habitat and critical habitat triggering species. ➤ Include or reference the NG plan/strategy in the BMP. 	Biodiversity expert	<i>During construction, prior to operational phase</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
3.7 Implement the NG strategy and plan for migratory species qualifying as critical habitat, where relevant.	Management action	Uncertain (see 3.6 above)	<ul style="list-style-type: none"> ➤ Implement the relevant measures and interventions towards meeting NG, as per the NG strategy in 3.6. 	Biodiversity expert Applicant / Developer	<i>During implementation/operational phase</i>		
3.8 Monitor and report on the success of implementation of the NG strategy and plan for migratory bird species qualifying as critical habitat, where relevant.	Monitoring action Management action	Uncertain (see 3.6 above)	<ul style="list-style-type: none"> ➤ Implement monitoring plan and report on success and regular intervals defined in said plan. ➤ Use monitoring results to adapt measures/actions where required and implement adapted measures as necessary. 	Biodiversity expert Applicant / Developer	<i>During implementation/operational phase</i>		
4 SPECIES: FLORA							
4.1 Undertake further field surveys and sampling for flora / vegetation, as required.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Undertake additional flora surveys focused on target species (threatened, rare, protected, endemic plants). ➤ Undertake access road surveys focused on habitats, flora, and terrestrial flora. ➤ Identify and map the locations of protected/rare/endemic/threatened plants within the development footprint as per the layout plan, using GIS. ➤ Refer to individual scopes for each WPP (see Chapter 5 and specifically Table 5-1 of the BAPF). 	Biodiversity expert / botanist	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>	Currently ongoing	
4.2 Develop protected/rare/endemic/threatened plant species translocation or replacement plan.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> ➤ Confirm the locations of protected/rare/endemic/threatened plants within the development footprint as per the layout plan (see 4.1 above) and confirm if there is a requirement to translocate or replace plants that could be directly impacted or lost. ➤ Develop a strategy and plan to either rescue and translocate or replace plants based on their specific requirements per species. ➤ Identify suitable receiving sites and natural habitats for translocation / replacement planting. ➤ Include a monitoring plan for evaluating success of plant translocation or replacement measures. ➤ Include or reference the translocation/planting in the BMP. 	Biodiversity expert / botanist	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
4.3 Implement plant translocation or replacement plan.	Management action	Uncertain (see 4.2 above)	<ul style="list-style-type: none"> ➤ Apply for any relevant permits necessary to handle/relocate protected plant species. ➤ Identify a service provider to help with seed collection, translocation of plant specimens (if relevant) and the recreation of habitats where necessary. ➤ Implement necessary plant rescue and translocation or replacement planting as per the plan/strategy. Collect specimens for translocation and store adequately for translocation. ➤ Seed needed to propagate plants for replacement planting of plants lost due to the development are to be collected during the appropriate season and before construction commences. ➤ Proposed receiving areas for translocation are likely to be the remaining untransformed/natural woodland areas or lesser degraded habitats within adjacent areas that will not be impacted by construction, or to appropriate habitats for each species type based on their individual requirements. ➤ Translocate plant species during their active growth phase, typically in spring or early summer, when plants are actively growing and more resilient to transplant shock. 	Contractor / EPC Biodiversity expert / botanist	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
			<ul style="list-style-type: none"> ➤ For species that rely on seed dispersal mechanisms, such as wind or animal dispersal, translocate seeds during late summer or fall when seeds are ripe and ready for dispersal. ➤ Avoid translocating plants during extreme environmental conditions such as winter, when cold temperatures, frost, or heavy precipitation may increase transplant shock and reduce survival rates. Winter translocation can also disrupt natural dormancy cycles, impacting plant health. 				
4.4 Monitor the success of plant translocation or replacement.	Monitoring action Management action	Uncertain (see 4.2 above)	<ul style="list-style-type: none"> ➤ Implement monitoring plan and monitor and report on the success of plant translocation/planting at regular intervals as defined in the plan (see 4.3 above). ➤ Use monitoring results to adapt measures/actions where required and implement adapted measures as necessary. 	External biodiversity specialist Applicant / Developer	<i>During implementation/operational phase</i>		
5 SPECIES: FAUNA							
5.1 Undertake further field surveys and sampling for fauna species, as required.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Undertake VP (Vantage Point) surveys and breeding bird surveys as per a methodology aligned with NatureScot guidance. ➤ Undertake bat surveys as per a methodology aligned with NatureScot guidance. ➤ Undertake access road surveys focused on habitats, flora and terrestrial flora. ➤ Identify and map the locations of protected/rare/endemic/threatened animal species within the Project AoI and development footprint as per the layout plan. ➤ Refer to individual scopes for each WPP (see Chapter 5 and specifically Table 5-1 of the BAPF). 	Biodiversity expert / ecologist	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>	Currently ongoing	
5.2 Develop a pre-construction wildlife search protocol and fauna shepherding/relocation protocol.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Develop protocols to inform pre-construction surveys for wildlife and shepherding/relocation of any wildlife found on the construction site or areas to be cleared. 	Biodiversity expert / ecologist	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
5.3 Implement the pre-construction wildlife search protocol and fauna shepherding/relocation protocol, as necessary.	Management action	Yes	<ul style="list-style-type: none"> ➤ Implement the pre-construction wildlife search protocol and fauna shepherding/relocation protocol, as necessary, as per the protocols developed in 5.2 above. ➤ Apply for any relevant permits necessary to handle/capture/relocate faunal species. 	Biodiversity expert / ecologist Contractor / EPC	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
5.4 Undertake a Collision Risk Assessment for target bird species.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Collision Risk Modelling (CRM) of target birds to be undertaken in accordance with good international practice as per NatureScot (formerly Scottish Natural Heritage) guidelines and using the results of the VP surveys. ➤ Potential Biological Removal (PBR) to be estimated for target bird species based on the CRM results and considering factors such as population size, reproductive rates, and mortality rates. ➤ Undertake a cumulative collision risk assessment at the project level (inclusive of all nine sub-projects). 	Biodiversity expert (ornithologist / bird expert)	<i>Prior to operation</i>		
5.5 Develop an Adaptive Management & Monitoring Plan for Birds and Bats.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Determine annual fatality thresholds based on the outputs of the Collision Risk Assessment in 5.4, above. 	Bird / bat experts	<i>Prior to operation</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
			<ul style="list-style-type: none"> ➤ Develop an operational carcass monitoring protocol and plan for birds/bats and advise on timing and frequency of monitoring activities. ➤ Develop adaptive management measures informed by operational carcass monitoring and annual fatality estimations for birds and bats, to determine where additional mitigation may be necessary for specific turbines/clusters of turbines, such as: adjusting turbine cut-in speeds (increased) for site-specific and seasonal bat activity peaks, feathering of turbine blades, auditory deterrents and/or painting of alternate turbine blades to increase visibility for birds⁷. ➤ Measures are to consider turbine curtailment for bats and shut-down-on-demand type protocols for managing bird collision risks. ➤ Enerjisa has committed already to a turbine 'shut-down-on-demand' (SDOD) system to mitigate residual impacts on migratory birds, in particular, that trigger critical habitat. It is advised that Enerjisa prepare a technical note on the potential SDOD systems to be considered, with information on how, when (under what conditions and where the SDOD system will be implemented/deployed. ➤ Include deterrents / flight diverters and other mitigation aligned with GIP for birds for any overhead powerlines where there is a risk of collision/electrocution of birds (fitted or retrofitted, as necessary). 				
5.6 Implement post-construction bird and bat fatality monitoring and use results to inform adaptive management measures.	Monitoring action Management action	Yes	<ul style="list-style-type: none"> ➤ Implement the bird/bat carcass monitoring plan and program, focused on investigating avifauna and bat fatalities during periods of heightened bird/bat activity. ➤ Use the monitoring data to inform adaptive management measures as per the Adaptive Management & Monitoring Plan for Birds and Bats in 5.5, above. 	Bird / bat experts Wind farm operator	<i>During operation</i>		
5.7 Develop Construction-phase Biodiversity Management Plan (BMP) that includes mitigation measures for faunal species.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Develop the construction BMP that includes mitigation and management measures for fauna, including (amongst others): <ul style="list-style-type: none"> ○ Access controls; ○ Vehicle restrictions; ○ Wildlife management; ○ Management of night-time works; ○ Noise and vibration controls; ○ Air quality and dust control; ○ Lighting controls; ○ Construction-timing to avoid key breeding periods for example. 	Biodiversity expert	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		

⁷It is acknowledged in the literature (Behr et al., 2017) that pre-construction survey estimates of bat collision risk at wind project sites is methodologically extremely difficult and with high levels of prediction uncertainty. Cut-in speed adjustment (5m/s) for site-specific and seasonal bat activity peaks will therefore not be implemented from the start of the Project. In depth understanding of collision risk will need to be informed by operational carcass monitoring and through an adaptive management program whereby monitoring and modelling during operation can be used to inform interventions such as the recommendation of detailed and site-specific curtailment measures. Based on the monitoring results, curtailment can then be adjusted after 2-3 months of operation where necessary (e.g. high-risk areas). The cut-in speeds and periods will be reviewed annually to test the efficacy of the curtailment regime and adjusted accordingly. The use of habitat management to mitigate potential impacts on bats either through diversion to alternate feeding areas, or improvement in bat survival through provision of additional feeding, roosting and commuting resource remains a complimentary method of reducing impacts, however curtailment is acknowledged as the primary, and currently only proven method for reducing collision effects. Behr et al. (2017) recommend that operational monitoring and modelling of bat collision risk should be implemented to inform more efficient operational mitigation that incorporates additional variables (e.g. time of night, wind speed, temperature, associated bat activity) to define operation rules that are turbine-specific and maximize energy production with the lowest possible collision risk for bats.

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
5.8 Implement the construction-phase BMP.	Management action	Yes	<ul style="list-style-type: none"> ➤ Implement the BMP for the construction phase and monitor success of mitigation/management options. 	Contractor / EPC	<i>During construction</i>		
5.9 Design wildlife crossings for key species and include these measures in the BMP.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> ➤ Conduct thorough site assessments to identify the need for and optimal locations for wildlife crossings/tunnels, considering factors such as species habitat preferences, road crossing frequency, and potential fragmentation effects. This may be relevant to small mammals and reptiles, such as Common tortoise (<i>Testudo graeca</i>, globally VU). ➤ Incorporate wildlife crossings (e.g. tunnels) into access road construction plans to facilitate the movement of small mammals and reptiles across access roads, where considered relevant and necessary. ➤ Alternatives to wildlife crossings may also be considered as appropriate and under the advice of an external faunal ecologist. ➤ Prioritize the placement of these crossings/tunnels in areas where habitat fragmentation is likely to occur, ensuring connectivity and reducing barriers to wildlife movement. ➤ Collaborate with wildlife experts and transportation agencies to design and construct wildlife-friendly infrastructure that promotes ecosystem connectivity and minimizes human-wildlife conflicts. Regular monitoring and maintenance of wildlife tunnels should be carried out to assess effectiveness and ensure ongoing functionality 	Biodiversity expert / faunal ecologist	<i>Prior to construction commencing (during construction for WPPs where construction has commenced)</i>		
5.10 Implement wildlife crossings where relevant.	Species-specific action	Uncertain (see 5.9 above)	<ul style="list-style-type: none"> ➤ Implement wildlife crossings/tunnels as per the plan developed, where considered appropriate and necessary. ➤ Regular monitoring and maintenance of wildlife tunnels should be carried out to assess effectiveness and ensure ongoing functionality 	Contractor / EPC Biodiversity expert / faunal ecologist	<i>During construction</i>		
5.11 Implement wildlife habitat enhancement, where relevant and possible.	Management action	Yes	<ul style="list-style-type: none"> ➤ Consider 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, may serve to reduce the number of bats in the wind farm area and therefore reduce collision risks. ➤ Integrating bird-friendly landscaping practices, such as planting native vegetation and providing water sources, to create diverse habitats that support avian biodiversity. ➤ The need for this specific requirement will be informed by the outcomes of operational monitoring. Where necessary, an ecologist / biodiversity specialist will need to be appointed to advise on the location and type of habitat enhancement required. 	Contractor / EPC Biodiversity expert / faunal ecologist Wind farm operator	<i>During operation</i>		
5.12 Implement wildlife crossings where relevant.	Species-specific action	Uncertain (see 5.11 above)	<ul style="list-style-type: none"> ➤ Implement wildlife crossings/tunnels as per the plan developed. ➤ Regular monitoring and maintenance of wildlife tunnels should be carried out to assess effectiveness and ensure ongoing functionality 	Contractor / EPC Biodiversity expert / faunal ecologist	<i>During construction</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
5.13 Develop and implement training plan for workers/employees to raise awareness.	Enabling action Management action	Yes	<ul style="list-style-type: none"> ➤ Design and implement a plan for employee training to raise awareness around biodiversity and impacts as well as relevant management measures. ➤ This can be included as an Annex/Appendix to the BMP. ➤ These can be in the form of interactive workshops, toolbox talks, field exercises, and protocols. 	Contractor / EPC Biodiversity expert	During construction		
6 ECOSYSTEM SERVICES							
6.1 Identify priority ecosystem services and potential risk of impact thereon, where applicable.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> ➤ Update the ESIA biodiversity impact assessment to reflect the assessment of priority ecosystem services, where relevant. 	Biodiversity expert	Prior to construction commencing (during construction for WPPs where construction has commenced)		
6.2 Where priority ecosystem services are identified, develop measures to minimise impacts thereon.	Enabling action	Uncertain (see 6.1 above)	<ul style="list-style-type: none"> ➤ Confirm whether priority ecosystems could be impacted. ➤ Reflect mitigation and management measures for priority ecosystem services in a Biodiversity Management Plan (BMP) for the Project that considers construction, operation and decommissioning phases. 	Biodiversity expert	Prior to construction commencing (during construction for WPPs where construction has commenced)		
6.3 Implement measures to manage/mitigate impacts on priority ecosystem services as per the BMP and where relevant.	Management action	Uncertain (see 6.1 above)	<ul style="list-style-type: none"> ➤ Implement the measures as per the BMP. 	Contractor / EPC	During project implementation (construction, operation, decommissioning)		
7 INVASIVE ALIEN SPECIES (IAS)							
7.1 Identify and assess risks of IAS introduction and/or spread due to the Project.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Update the ESIA biodiversity impact assessment to reflect the assessment of IAS risks. ➤ Identify the needs for an IAS eradication and/or control plan and program based on the outcomes of the risk assessment. 	Biodiversity expert / botanist	Prior to construction commencing (during construction for WPPs where construction has commenced)		
7.2 Develop an IAS eradication and/or control plan and program, focused on management of IAS introduction and/or spread of existing IAS into adjacent/surrounding natural habitats.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> ➤ This can be a stand-alone plan or form part of the Biodiversity Management Plan (BMP) for the Project that considers construction, operation and decommissioning phases. ➤ A monitoring plan to monitor IAS pre- and post-treatment is to be included in the IAS control plan. 	Biodiversity expert / botanist	Prior to construction commencing (during construction for WPPs where construction has commenced)		
7.3 Implement the IAS eradication and/or control plan and program or the BMP (if this is included as a section or Annex/Appendix to the BMP).	Management action	Uncertain (see 7.2 above)	<ul style="list-style-type: none"> ➤ Implement the IAS eradication/control measures as per the BMP. 	Contractor / EPC Applicant / Developer	During project implementation (construction, operation, decommissioning)		
7.4 Monitor IAS levels post-control / treatment.	Monitoring action	Uncertain (see 7.2 above)	<ul style="list-style-type: none"> ➤ Implement post-treatment monitoring plan. 	Biodiversity expert / botanist Applicant / Developer Wind farm operator	During project implementation (construction, operation, decommissioning)		

TABLE 8-2 HIGH-LEVEL ACTION PLAN FOR THE OPERATIONAL WPP (AKKOY)

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
1 PROTECTED AREAS & INTERNATIONALLY RECOGNISED AREAS (collectively termed 'designated areas')							
1.1 Obtain all necessary permits/licenses to operate within a designated area, where relevant.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Ensure development is legally permitted and permits are up to date. 	Applicant / Developer	<i>During project implementation (operation, retroactively)</i>		
1.2 Review any management plans and conservation objectives for the protected area/internationally recognized areas.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Obtain management plans for designated areas, where available. ➤ Where available, review the conservation aims/objectives. 	Biodiversity expert	<i>During project implementation (operation, retroactively)</i>		
1.3 Undertake relevant stakeholder consultation, if required.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> ➤ Engage with relevant stakeholders such as protected areas managers and local communities on issues with regards to development affecting designated areas, where relevant. 	Applicant / Developer Biodiversity expert	<i>During project implementation (operation, retroactively)</i>		
1.4 Align the Project with the conservation aims/objectives of the designated areas.	Enabling action	Uncertain (see 1.3 above)	<ul style="list-style-type: none"> ➤ Promote or enhance conservation aims/objectives of the Protected Area or Internationally Recognized Areas, where relevant, through developing measures to manage biodiversity values and documenting these within a Biodiversity Management Plan (BMP). 	Biodiversity expert	<i>During project implementation (operation, retroactively)</i>		
1.5 Implement measures to manage biodiversity values in alignment with the conservation aims/objectives of the designated areas.	Management action	Uncertain (see 1.3 above)	<ul style="list-style-type: none"> ➤ Implement the relevant measures as per the BMP (see 1.4 above). 	Applicant / Developer Contractor / EPC	<i>During project implementation (operation, decommissioning)</i>		
2 NATURAL HABITAT							
2.1 Identify and quantify potential loss of natural habitat due to the Project in terms of habitat hectares (or 'hectare equivalents').	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Identify and map natural habitat in the Project AoI using GIS and use this to overlay the development layout plan and quantify potential loss of natural habitat due to the Project. ➤ Assess / estimate the condition of natural habitat. ➤ Express natural habitat loss in terms of habitat hectares (or 'hectare equivalents', which is a combination of extent in hectares weighted according to habitat condition rating). 	Biodiversity expert	<i>During project implementation (operation, retroactively)</i>		
2.2 Develop a strategy and plan to achieve No Net Loss (NNL) of biodiversity for residual impacts on natural habitats, where relevant.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> ➤ Confirm requirements based on action 2.2 above. ➤ Align measures with the mitigation hierarchy, taking into account actions to avoid, minimise fragmentation of habitats, onsite restoration and biodiversity offsets where necessary. ➤ Develop a strategy and plan to achieve No Net Loss (NNL) of biodiversity for residual impacts on natural habitats. This will likely focus on measures to protect, conserve and/or enhance/restore the <i>Pinus nigra</i> woodland habitats, selecting appropriate passive and/or active restoration techniques and species mixtures based on site ecological conditions and habitat/plant species requirements. ➤ Include measures in the restoration plan for temporary areas disturbed by construction, which will be restored post-construction to a realistic state. ➤ Allow for decommissioning phase activities supporting post-closure habitat restoration and rehabilitation measures. ➤ Identify strategic locations for habitat restoration and wildlife corridor restoration initiatives to reconnect fragmented habitats and promote improved landscape connectivity. 	Biodiversity expert	<i>During project implementation (operation, retroactively)</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
			<ul style="list-style-type: none"> ➤ Identify habitat enhancement measures such as planting native vegetation, installing wildlife crossings, and creating buffer zones to mitigate habitat fragmentation effects. ➤ Include a plan to monitor success of NNL strategy, including indicators and metrics based on habitat. ➤ Include or reference the NNL plan/strategy in the BMP. 				
2.3 Implement the NNL strategy and plan for natural habitat, where relevant.	Management action	Uncertain (see 2.2 above)	<ul style="list-style-type: none"> ➤ Implement measures to minimise, restore, compensate for natural habitat impacts towards meeting NNL, where relevant. ➤ Implement habitat restoration and/or biodiversity offsets (as relevant) based on the NNL strategy and plan. 	Contractor / EPC Applicant / Developer	<i>During implementation/operational phase</i>		
2.4 Monitor and report on the success of implementation of the NNL strategy and plan for natural habitat, where relevant.	Monitoring action	Uncertain (see 2.2 above)	<ul style="list-style-type: none"> ➤ Implement monitoring plan and report on success and regular intervals defined in said plan. 	Biodiversity expert Applicant / Developer	<i>During implementation/operational phase</i>		
3 CRITICAL HABITATS: Migratory birds							
3.1 Develop NG strategy for migratory bird species that qualify as critical habitat (Dalmatian Pelican).	Enabling action	Possible but requires further verification following further data collection during 2024	<ul style="list-style-type: none"> ➤ Confirm critical habitat trigger species (pending updates to the Critical Habitat Assessment (CHA) report following additional data collection during 2024). ➤ Undertake Collision Risk Assessment (CRA) to estimate collision and mortality risk for target species. ➤ Verify that critical habitat trigger species are associated with the WPP and there is a risk of residual impact on species based on the CRA, justifying the need for a NG approach for these species. ➤ Align measures with the mitigation hierarchy, taking into account actions to avoid or minimise potential collisions and mortalities with wind turbines and overhead powerlines collisions/possible electrocution during operation. Measures to reduce the risk of collision with turbines, aligned with GIP, such as developing and implementing an appropriate 'Shut-Down-On-Demand' (SDOD) system and protocol that considers the main periods of migration for target bird species. Measures to increase the visibility of overhead powerlines and insulate components that could present an electrocution risk to birds. ➤ Consult with relevant stakeholders (i.e. Doğa Derneği) concerning conservation opportunities and possible interventions for KBAs/IBAs identified as potential locations for actions (refer to Table 7-5 for detailed information on KBAs/IBAs and potential stakeholders). ➤ Informed by engagement with key relevant stakeholders, develop a detailed strategy and plan to achieve Net Gain (NG) of biodiversity for residual impacts to migratory birds that qualify as critical habitat (Dalmatian Pelican). Refer to Tables 7-4 and 7-5 for NG opportunities to explore further. ➤ Develop a robust and appropriate long-term monitoring plan to monitor success of NG strategy, including indicators and metrics based on habitat and critical habitat triggering species. 	Biodiversity expert	<i>During implementation/operational phase</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
			<ul style="list-style-type: none"> ➤ Include or reference the NG plan/strategy in the BMP. 				
3.2 Implement the NG strategy and plan for migratory species qualifying as critical habitat (Dalmatian Pelican).	Management action	Uncertain (see 3.1 above)	<ul style="list-style-type: none"> ➤ Implement the relevant measures and interventions towards meeting NG, as per the NG strategy in 3.1. 	Biodiversity expert Applicant / Developer	<i>During implementation/operational phase</i>		
3.3 Monitor and report on the success of implementation of the NG strategy and plan for migratory bird species qualifying as critical habitat (Dalmatian Pelican).	Monitoring action Management action	Uncertain (see 3.1 above)	<ul style="list-style-type: none"> ➤ Implement monitoring plan and report on success and regular intervals defined in said plan. ➤ Use monitoring results to adapt measures/actions where required and implement adapted measures as necessary. 	Biodiversity expert Applicant / Developer	<i>During implementation/operational phase</i>		
4 SPECIES: FLORA							
No longer relevant to the Akkoy operational WPP (mitigation/management measures for flora impacted during the construction phase no longer possible).							
5 SPECIES: FAUNA							
5.1 Undertake further field surveys and sampling for fauna species, as required.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Undertake VP (Vantage Point) surveys and breeding bird surveys as per a methodology aligned with NatureScot guidance. ➤ Undertake bat surveys as per a methodology aligned with NatureScot guidance. ➤ Identify and map the locations of protected/rare/endemic/threatened animal species within the Project AoI and development footprint as per the layout plan. 	Biodiversity expert / faunal ecologist	<i>During project implementation (operation, retroactively)</i>	Currently ongoing	
5.2 Undertake a Collision Risk Assessment for target bird species.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Collision Risk Modelling (CRM) of target birds to be undertaken in accordance with good international practice as per NatureScot (formerly Scottish Natural Heritage) guidelines and using the results of the VP surveys. ➤ Potential Biological Removal (PBF) to be estimated for target bird species based on the CRM results and considering factors such as population size, reproductive rates, and mortality rates. 	Biodiversity expert / bird expert (ornithologist)	<i>During project implementation (operation, retroactively)</i>		
5.3 Develop an Adaptive Management & Monitoring Plan for Birds and Bats.	Enabling action	Yes	<ul style="list-style-type: none"> ➤ Determine annual fatality thresholds based on the outputs of the Collision Risk Assessment in 5.3, above. ➤ Develop an operational carcass monitoring protocol and plan for birds/bats and advise on timing and frequency of monitoring activities. ➤ Develop adaptive management measures informed by operational carcass monitoring and annual fatality estimations for birds and bats, to determine where additional mitigation may be necessary for specific turbines/clusters of turbines, such as: adjusting turbine cut-in speeds (increased) for site-specific and seasonal bat activity peaks, feathering of turbine blades, auditory deterrents and/or painting of alternate turbine blades to increase visibility for birds⁸. 	Bird / bat experts	<i>During project implementation (operation, retroactively)</i>		

⁸It is acknowledged in the literature (Behr et al., 2017) that pre-construction survey estimates of bat collision risk at wind project sites is methodologically extremely difficult and with high levels of prediction uncertainty. Cut-in speed adjustment (5m/s) for site-specific and seasonal bat activity peaks will therefore not be implemented from the start of the Project. In depth understanding of collision risk will need to be informed by operational carcass monitoring and through an adaptive management programme whereby monitoring and modelling during operation can be used to inform interventions such as the recommendation of detailed and site-specific curtailment measures. Based on the monitoring results, curtailment can then be adjusted after 2-3 months of operation where necessary (e.g. high-risk areas). The cut-in speeds and periods will be reviewed annually to test the efficacy of the curtailment regime and adjusted accordingly. The use of habitat management to mitigate potential impacts on bats either through diversion to alternate feeding areas, or improvement in bat survival through provision of additional feeding, roosting and commuting resource remains a complimentary method of reducing impacts, however curtailment is acknowledged as the primary, and currently only proven method for reducing collision effects. Behr et al. (2017) recommend that operational monitoring and modelling of bat collision risk should be implemented to inform more efficient operational mitigation that incorporates additional variables (e.g. time of night, wind speed, temperature, associated bat activity) to define operation rules that are turbine-specific and maximize energy production with the lowest possible collision risk for bats.

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
			<ul style="list-style-type: none"> Measures are to consider turbine curtailment for bats and shut-down-on-demand type protocols for managing bird collision risks. Include deterrents / flight diverters and other mitigation aligned with GIP for birds for any overhead powerlines where there is a risk of collision/electrocution of birds (fitted or retrofitted, as necessary). 				
5.4 Implement post-construction bird and bat fatality monitoring and use results to inform adaptive management measures.	Monitoring action Management action	Yes	<ul style="list-style-type: none"> Implement the bird/bat carcass monitoring plan and program, focused on investigating avifauna and bat fatalities during periods of heightened bird/bat activity. Use the monitoring data to inform adaptive management measures as per the Adaptive Management & Monitoring Plan for Birds and Bats in 5.3, above. 	Bird / bat experts Wind farm operator	<i>During operation</i>		
5.5 Implement wildlife habitat enhancement, where relevant and possible.	Management action	Yes	<ul style="list-style-type: none"> Consider 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, may serve to reduce the number of bats in the wind farm area and therefore reduce collision risks. Integrating bird-friendly landscaping practices, such as planting native vegetation and providing water sources, to create diverse habitats that support avian biodiversity. The need for this specific requirement will be informed by the outcomes of operational monitoring. Where necessary, an ecologist / biodiversity specialist will need to be appointed to advise on the location and type of habitat enhancement required. 	Contractor / EPC Biodiversity expert / faunal ecologist Wind farm operator	<i>During operation</i>		
6 ECOSYSTEM SERVICES							
6.1 Identify priority ecosystem services and potential risk of impact thereon, where applicable.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> Update the ESIA biodiversity impact assessment to reflect the assessment of priority ecosystem services, where relevant. 	Biodiversity expert	<i>During project implementation (operation, retroactively)</i>		
6.2 Where priority ecosystem services are identified, develop measures to minimise impacts thereon.	Enabling action	Uncertain (see 6.1 above)	<ul style="list-style-type: none"> Confirm whether priority ecosystems could be impacted. Reflect mitigation and management measures for priority ecosystem services in a Biodiversity Management Plan (BMP) for the Project that considers operation and decommissioning phases. 	Biodiversity expert	<i>During project implementation (operation, retroactively)</i>		
6.3 Implement measures to manage/mitigate impacts on priority ecosystem services as per the BMP and where relevant.	Management action	Uncertain (see 6.1 above)	<ul style="list-style-type: none"> Implement the measures as per the BMP. 	Contractor / EPC	<i>During project implementation (operation, decommissioning)</i>		
7 INVASIVE ALIEN SPECIES (IAS)							
7.1 Identify and assess risks of IAS introduction and/or spread due to the Project.	Enabling action	Yes	<ul style="list-style-type: none"> Update the ESIA biodiversity impact assessment to reflect the assessment of IAS risks. Identify the needs for an IAS eradication and/or control plan and program based on the outcomes of the risk assessment. 	Biodiversity expert / botanist	<i>During project implementation (operation, retroactively)</i>		
7.2 Develop an IAS eradication and/or control plan and program, focused on management of IAS introduction and/or spread of existing IAS into adjacent/surrounding natural habitats.	Enabling action	Uncertain (requires further investigation)	<ul style="list-style-type: none"> This can be a stand-alone plan or form part of the Biodiversity Management Plan (BMP) for the Project that considers operation and decommissioning phases. A monitoring plan to monitor IAS pre- and post-treatment is to be included in the IAS control plan. 	Biodiversity expert / botanist	<i>During project implementation (operation, retroactively)</i>		

Actions	Category	Relevant to Project?	Further Actions/Steps Required	Responsibility	Timeframe	Implementation Schedule	
						2024	2025 →
7.3 Implement the IAS eradication and/or control plan and program or the BMP (if this is included as a section or Annex/Appendix to the BMP).	Management action	Uncertain (see 7.2 above)	<ul style="list-style-type: none"> ➤ Implement the IAS eradication/control measures as per the BMP. 	Contractor / EPC Applicant / Developer	<i>During project implementation (operation, decommissioning)</i>		
7.4 Monitor IAS levels post-control / treatment.	Monitoring action	Uncertain (see 7.2 above)	<ul style="list-style-type: none"> ➤ Implement post-treatment monitoring plan. 	Biodiversity expert / botanist Applicant / Developer Wind farm operator	<i>During project implementation (operation, decommissioning)</i>		

9. BIODIVERSITY MANAGEMENT IMPLEMENTATION

9.1 ROLES AND RESPONSIBILITIES

Setting roles and responsibilities for the various management actions defined in Chapter 8 will be critical to successful implementation of the BAPF and future individual BAPs for each WPP. This considers what internal support and expertise lies within Enerjisa and where certain actions and tasks may require third-party input and/or outsourcing.

Whilst the ultimate responsibility for implementing the BAPF rests with Enerjisa, specific technical tasks and measures will be delegated to the EPC Contractor and subcontractors/independent specialists/outside experts likely to be involved in biodiversity management measures implementation and monitoring/evaluation. These are presented and described in Table 9-1 below.

TABLE 9-1 ROLES AND RESPONSIBILITIES FOR BIODIVERSITY MANAGEMENT

Role	Responsibilities
Asset Management & Sustainability Department Director	<ul style="list-style-type: none"> Management will ensure sufficient and qualified resources are allocated on an ongoing basis to achieve effective implementation of actions, measures and monitoring activities under Enerjisa's responsibility. Final approval of this Plan and subcontractors' plans/procedures for the Project
Climate Change and Environmental Manager	<ul style="list-style-type: none"> Ensuring that the BAPF is kept up to date and appropriate to the nature and scale of the Project and ensuring effective implementation. This will include the selection of specialized contractor(s) for specific tasks to be carried out as part of the implementation of this Plan such as (but not limited to) additional studies, stakeholder engagement and data analysis and reporting. Designating specific personnel on site or at the administrative level, clearly define their roles and responsibilities within the environmental and social management system. Ensure allocation of sufficient resources for the Plan implementation including for ESHS organization, permitting, training, equipment and qualified personnel. Taking appropriate actions to evaluated and approved resulting Offset Projects, bringing important considerations on resulting Offset Projects to the attention of Management. Ultimate responsibility for ensuring implementation of required corrective actions including in response to identified ESHS non-compliances or incidents.
Senior Biodiversity Expert (still to be appointed by Enerjisa)	<ul style="list-style-type: none"> Facilitate organization of additional studies and stakeholder engagement activity based on local knowledge. Collect and suggest opportunities for potential offset activities and additional conservation actions based on local knowledge. Assist with developing supporting plans and protocols. Assist with developing Scope of Works and Terms of Reference for monitoring implementation. Periodical review of biodiversity management effectiveness.

Role	Responsibilities
On-site ecologist	<ul style="list-style-type: none"> Assist with developing Scope of Works and Terms of Reference for constructional and operational monitoring implementation. Onsite training on implementation of the BMP and supporting plans and protocols. Adhoc support onsite or remotely via phone/email as necessary. The ecologist could be a position filled internally within Enerjisa as part of an internal recruitment process or could also be an external (third party) consultant.
Specialized contractor(s)	<ul style="list-style-type: none"> Effective execution of the specific tasks assigned in conformity with the BAPF action plan and with contractual arrangements. Respect of EHS requirements included in the ESMS. Agree with the timing and logistics of the stakeholder engagement and additional studies. Provide relevant reporting on stakeholder engagement and additional studies as indicated in this plan. Propose changes and integrations to the proposed activities included in the Plan shall be evaluated and approved by Manager and by Director.

9.2 REVIEW OF CURRENT ORGANIZATIONAL CAPACITY WITHIN ENERJISA

Currently, Enerjisa has the following organizational capacity when it comes to the management of biodiversity (see organizational chart in Figure 9-1):

- Asset Management and Sustainability Department Director
- Corporate Social Manager
- Lenders Relations E&S Manager
- Lenders Relations E&S Expert
- Climate Changes and Environmental Manager
- Senior Biodiversity Expert (position not yet filled*)

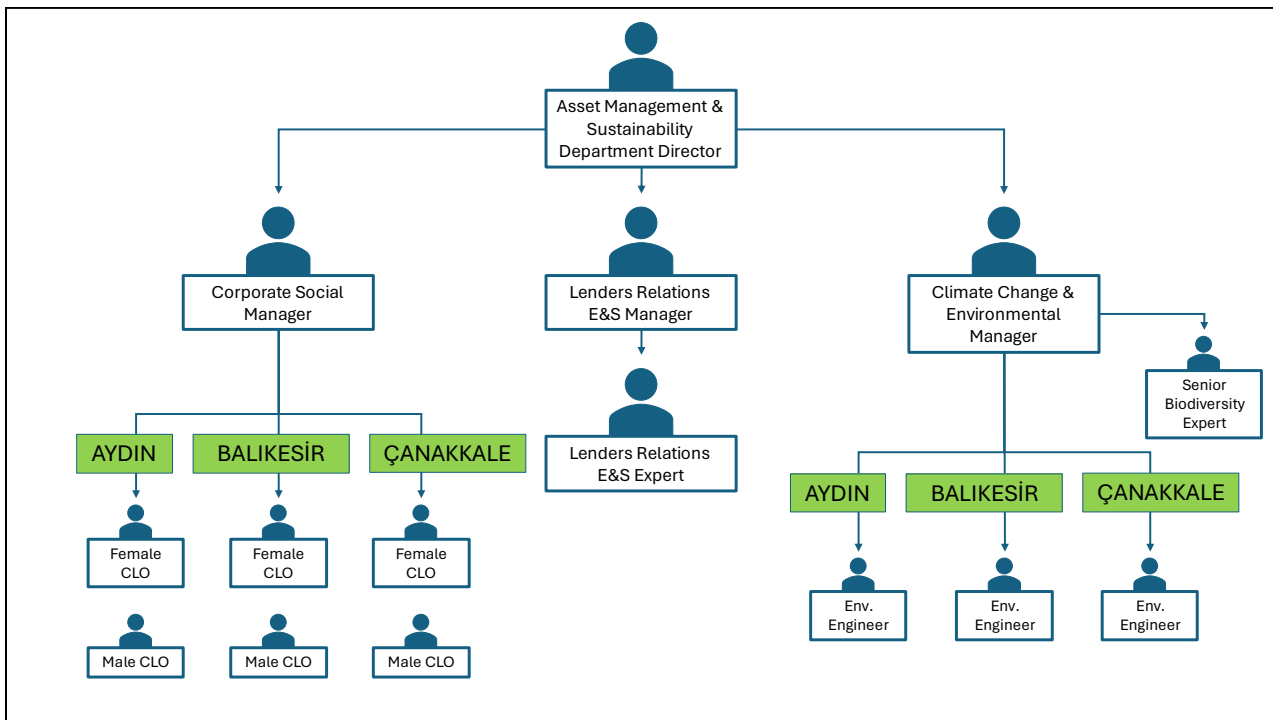


FIGURE 9-1 ORGANIZATIONAL CHART OF ENERJISA

9.3 ADDITIONAL SUPPORT REQUIRED

Based on Enerjisa's current organization capacity, several roles and functions will need to be fulfilled by external specialists / consultants towards the realization of the BAPF and biodiversity management actions identified. These are summarized below in Table 9-2 and include at a minimum:

- Biodiversity expert / ecologist with regional experience;
- Botanist;
- Ornithologist (bird expert);
- Bat expert; and
- Implementer for restoration actions.

Enerjisa has been actively seeking qualified candidates to fill the position of **Senior Biodiversity Expert**, yet the recruitment process remains ongoing. Nonetheless, it is imperative to procure on-site ecologists for each WPP, to be present full-time during both construction and operational phases.

It is also recommended that on-site ecologists dedicated to each WPP should be internally appointed, who report directly to the Senior Biodiversity Expert, should be included in the organizational chart. These dedicated on-site ecologists will work closely with the appointed Senior Biodiversity Expert, ensuring seamless coordination and reporting. Furthermore, as part of the Biodiversity Action Plan Framework (BAPF), robust stakeholder engagement initiatives will be underway, facilitated by CLOs who are currently working within Enerjisa during stakeholder meetings. External experts (third part consultants) would be an alternative to this approach.

TABLE 9-2 ADDITIONAL SUPPORT AND FUNCTIONS

Additional Support	Role and Functions / Responsibilities
<p>Biodiversity expert/ecologist (internal)</p>	<p>Biodiversity Action Plan Framework (BAPF):</p> <ul style="list-style-type: none"> Support with review and updates to BAPF as required <p>ESIA and CHA updates:</p> <ul style="list-style-type: none"> Support with review and updates to ESIA and CHA, where required <p>Ecosystem services assessment:</p> <ul style="list-style-type: none"> Undertake assessment of priority ecosystem services (where required) <p>Invasive alien species assessment and management:</p> <ul style="list-style-type: none"> Assess risks associated with introduction/spread of IAS Develop IAS eradication and/or control plan and program <p>Biodiversity Action Plans (BAPs):</p> <ul style="list-style-type: none"> Developing individual BAPs for each WPP based on the BAPF <p>Biodiversity Management Plans (BMPs):</p> <ul style="list-style-type: none"> Developing individual BMPs for each WPP for construction, operation and decommissioning phases <p>Pre-construction wildlife search protocol:</p> <ul style="list-style-type: none"> Developing pre-construction wildlife search protocol <p>Fauna shepherding protocol:</p> <ul style="list-style-type: none"> Developing wildlife/fauna shepherding protocol <p>NNL/NG strategy:</p> <ul style="list-style-type: none"> Support with analysis of natural habitat and/or critical habitat loss due to development and setting of NNL/NG targets and objectives Developing biodiversity NNL/NG strategy Supporting with implementation of NNL/NG strategy <p>Habitat restoration:</p> <ul style="list-style-type: none"> Developing habitat restoration plans Supporting with implementation of habitat restoration Monitoring and reporting on success of habitat restoration <p>Biodiversity offsets:</p> <ul style="list-style-type: none"> Developing offset strategies Development offset implementation/management plans Supporting with implementation of offsets Monitoring and reporting on success of biodiversity offsets <p>Invasive alien species (IAS) monitoring:</p> <ul style="list-style-type: none"> Surveys to monitor IAS <p>Environmental training:</p> <ul style="list-style-type: none"> Support with developing training materials on biodiversity management Delivering training (where relevant) <p>Stakeholder consultation:</p> <ul style="list-style-type: none"> Support with stakeholder consultation (where required)
<p>Botanist</p>	<p>Field surveys:</p> <ul style="list-style-type: none"> Undertaking additional/supplementary flora and habitat surveys and assessment with reporting (where necessary) <p>Protected/threatened/rare/endemic plant species rescue, translocation and/or replanting:</p> <ul style="list-style-type: none"> Developing rescue/translocation and/or replanting plans Supporting with implementation of rescue/translocation and/or replanting plans Monitoring and reporting on success of rescue/translocation and/or replanting <p>Invasive alien species (IAS) monitoring:</p> <ul style="list-style-type: none"> Surveys to monitor IAS (where relevant) <p>Habitat restoration:</p>

Additional Support	Role and Functions / Responsibilities
	<ul style="list-style-type: none"> Support with developing/implementing habitat restoration plans (where relevant) <p>Biodiversity offsets:</p> <ul style="list-style-type: none"> Support with developing/implementing offset plans (where relevant)
Ornithologist (bird expert)	<p>Field surveys:</p> <ul style="list-style-type: none"> Undertaking additional/supplementary bird surveys and assessment with reporting (where necessary) <p>Collision Risk Assessment:</p> <ul style="list-style-type: none"> Collision risk modelling (CRM) towards assessment of collision risk for birds <p>Adaptive Bird and Bat Monitoring and Management:</p> <ul style="list-style-type: none"> Develop Adaptive Bird and Bat Monitoring and Management Plan (ABBMMP) and programme Support with implementation of the ABBMMP <p>Post-construction bird and bat fatality monitoring:</p> <ul style="list-style-type: none"> Developing plan/protocol and programme for post-construction monitoring (carcass surveys) and annual fatality estimations Undertaking carcass monitoring (surveys), fatality estimations and reporting
Bat expert	<p>Field surveys:</p> <ul style="list-style-type: none"> Undertaking additional/supplementary bat surveys and assessment with reporting (where necessary) <p>Adaptive Bird and Bat Monitoring and Management:</p> <ul style="list-style-type: none"> Develop Adaptive Bird and Bat Monitoring and Management Plan (ABBMMP) and programme Support with implementation of the ABBMMP Support with review and updates of ABBMMP <p>Post-construction bird and bat fatality monitoring:</p> <ul style="list-style-type: none"> Developing plan/protocol and programme for post-construction monitoring (carcass surveys) and annual fatality estimations Undertaking carcass monitoring (surveys), fatality estimations and reporting Support with review and updates of ABBMMP
Implementer	<p>Protected/threatened/rare/endemic plant species rescue, translocation and/or replanting:</p> <ul style="list-style-type: none"> Implementation of rescue/translocation and/or replanting plans <p>Habitat restoration:</p> <ul style="list-style-type: none"> Implementation of habitat restoration <p>Biodiversity offsets:</p> <ul style="list-style-type: none"> Implementation of offsets <p>Invasive alien species (IAS) management:</p> <ul style="list-style-type: none"> IAS species eradication/control

10. ADAPTIVE MANAGEMENT, MONITORING AND EVALUATION (M&E) FRAMEWORK

10.1 ADAPTIVE MANAGEMENT APPROACH

Given the complexity in predicting impacts on biodiversity over the long term, the IFC PS6 requires an adaptive management approach, whereby mitigation and management measures are responsive to changing conditions and the results of monitoring throughout the project's 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 WPP 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 10-1. This approach is not limited to modifying previous approaches to the management of biodiversity as per the BAPF but aims to produce a plan which contributes to new knowledge and learnings that can improve future management, alongside best short-term outcomes based on present knowledge.

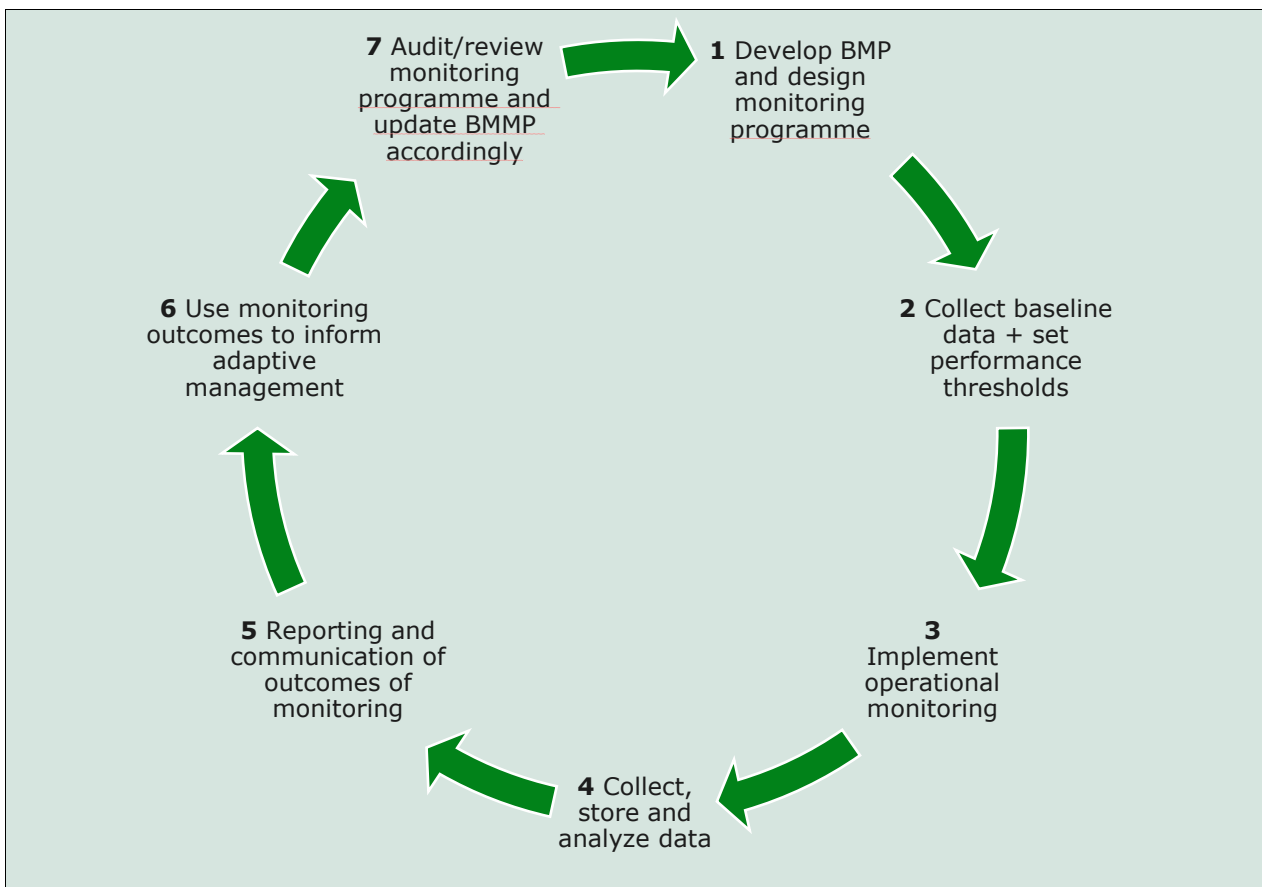


FIGURE 10-1 THE 'ADAPTIVE MANAGEMENT CYCLE'

The following guideline 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.

- The M&E program 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;
- Consider suitable control sites where possible (monitoring in comparable areas where project impacts are not occurring to detect effects unrelated to project impacts);
- 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.

10.2.2 SELECTING KEY PERFORMANCE INDICATORS

Typically, M&E starts with the identification of a set of Key Performance Indicators (KPIs), targets, metrics for measuring performance against targets and finally the monitoring required to be performed. As decisions (adaptive management) will be based on the M&E outcomes, clearly defined targets and an appropriate monitoring program will be required.

A KPI (Key Performance Indicator) is a quantifiable measure of performance over time for a specific objective, against a set of targets/objectives. Since biodiversity is complex, with many different aspects, this cannot be encompassed in a single biodiversity indicator and because KPIs are purpose-dependent, choices must be made for values and measures and to focus on some aspects of the biodiversity.

KPIs are a subset of selected indicators used to guide and measure the overall performance of plans developed to guide the management of biodiversity (i.e. BAP, BMP) and are important for tracking progress of implementation of biodiversity management measures and present one of the initial steps in monitoring, that precedes the actual monitoring itself. KPIs could include indicators which allow for measurement of extent (where); abundance (how much); condition (habitat quality), and diversity (number of species).

The following guideline regarding KPI selection for biodiversity should be applied when selecting KPIs to form part of an M&E programme:

- The main objective should be to understand, assess and track the most significant risks and impacts to biodiversity and natural ecosystems, not all of them (not everything that can be measured needs to be measured);
- Choose indicators aligned with goals, realistic to the current situation, easy to understand and measure, and flexible to change;
- KPIs should be sufficiently comprehensive, material and relevant, but not overly complicated;
- Use simple indicators instead of composite (or complex) indicators - provide more information about environmental factors for management;

- KPIs that allow for clear operational performance measurement + reporting around material biodiversity topics - without overburdening teams with too much admin / micro-management;
- Target setting is a critical component.

10.2.3 SETTING TARGETS AND IDENTIFYING SUITABLE METRICS

Target setting is an important process and needs to be informed by the baseline monitoring results, impact/risk assessment and in collaboration with a biodiversity expert with experience in setting targets.

Targets linked to operational phase of the WPPs and bird/bat species mortalities will be particularly important, and this process will require expert inputs. The fatality targets or thresholds for species will need to be informed by the baseline assessments (ongoing at the time of writing the BAPF) and collision risk assessment based on modelling (not completed for WPPs as of the date of writing the BAPF). Once these two processes have been completed, fatality thresholds can be established for target species.

Information Box. Establishing fatality thresholds

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 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.

Fatality thresholds are calculated following collection and analysis of demographic and biometric data for potentially impacted species population, then rationalizing a Project-specific threshold based on applicable conservation biology guidelines, policies or objectives.

Where no national or regional regulations exist on the mortality limits of volant species, LACs for birds can be established using individual species' threat status and calculated Potential Biological Removal (PBR) based on their conservative population estimates and biometric parameters. Global or regional population sizes retrieved from IUCN and BirdLife assessments of individual species can be used in the absence of national estimates.

For bats, typically there will be insufficient information on species population status and risks, such that fatality thresholds for individual species cannot be easily defined. Rather, these should be established with the collection of further data and consultation with experts on monitoring results during the operational phase.

Metrics allow for the measurement of actual results against targets for the purpose of quantification and evaluation of success in meeting targets.

Indicators of biodiversity change or response to pressures which can be used to develop metrics may include:

- Habitat extent (area)
- Habitat quality
- Level of habitat fragmentation
- Wildlife population numbers
- Number of breeding/nesting sites
- Number of species mortalities
- Displacement of species

- Number of turbine shut-downs implemented to avoid collisions
- Number of pollution incidents
- Number of trainings delivered

The following metrics are recommended generally:

- For **habitat**: extent and condition
- For **animal species**: number of species, population sizes
- For **plant species**: number of plants, species, density or extent of cover
- For **Invasive Alien Species**: number, density, or extent of cover

10.2.4 MONITORING FRAMEWORK

A framework for developing site-specific M&E programs for each of the WPPs is included below in Table 10-1 for the construction, Table 10-2 for operation and Table 10-3 for decommissioning.

TABLE 10-1 MONITORING FRAMEWORK FOR CONSTRUCTION

ASPECT	KPI AND TARGET	METRIC	METHOD OF MONITORING	RESPONSIBILITY
1 Pre-Construction				
1.1 Relevant environmental permit(s) obtained prior to construction commencing	All (100%) relevant permits have been obtained prior to construction works commencing.	Number of relevant permits secured compared to required number	<ul style="list-style-type: none"> • Permit register • Audits 	<ul style="list-style-type: none"> • E&S Officer for Contractor
1.2 Pre-construction surveys have been completed prior to construction commencing	100% of pre-construction environmental surveys have been completed prior to construction works commencing.	Number of surveys complete compared to required number	<ul style="list-style-type: none"> • Audit 	<ul style="list-style-type: none"> • E&S Officer for Contractor
1.3 Temporary sites have been established appropriately	100% of temporary works are demarcated and established in appropriate areas as per the site plan.	Percentage of work areas demarcated prior to construction	<ul style="list-style-type: none"> • Site inspection • Audit 	<ul style="list-style-type: none"> • E&S Officer for Contractor
1.4 Protected/rare/endemic/threatened plants have been identified and rescued for translocation where possible.	Plant rescue / translocation plan implemented (yes/no).	Implementation of plant rescue / translocation plan	<ul style="list-style-type: none"> • Site inspection • Audit 	<ul style="list-style-type: none"> • E&S Officer for Contractor
2 During Construction				
2.1 Invasive Alien Species (IAS) monitoring undertaken	IAS monitoring is undertaken in accordance with the BMP to identify any infestations requiring control.	Invasive monitoring survey implemented or not	<ul style="list-style-type: none"> • IAS survey and report • Audit 	<ul style="list-style-type: none"> • E&S Officer for Contractor • Expert (ecologist or botanist)
2.2 IAS controlled on site	The spread and introduction of IAS on the construction site has been actively controlled.	Extent or percentage cover of the site by IAS	<ul style="list-style-type: none"> • Site inspection • IAS survey and report 	<ul style="list-style-type: none"> • E&S Officer for Contractor • Expert (ecologist or botanist)

ASPECT	KPI AND TARGET	METRIC	METHOD OF MONITORING	RESPONSIBILITY
2.3 Access control implemented	100% avoidance of adjacent natural habitats outside of the construction zone.	Extent (area) of natural habitats	<ul style="list-style-type: none"> Site inspection Audit 	E&S Officer for Contractor
2.4 Vegetation stripping/clearing	No stripping / clearing of natural vegetation (e.g., woodland/forest/grassland) takes place outside of the authorized construction footprint.	Extent (area) of natural vegetation	<ul style="list-style-type: none"> Site inspection 	E&S Officer for Contractor
2.5 Spill incidents, soil/water contamination incidents	Zero spill / contamination incidents	Number of incidents reported	<ul style="list-style-type: none"> Site inspection Audit 	E&S Officer for Contractor
3.5 Environmental training requirements identified	Training requirements have been identified and a training schedule is kept current.	Training schedule available or not	<ul style="list-style-type: none"> Audit Training needs assessment and training matrix 	E&S Officer for Contractor
3.6 Environmental training conducted	100% of employees accessing the site have received the necessary induction and generic training (and any specialized training) as required.	Percentage of employees having received training	<ul style="list-style-type: none"> Audit Training register 	E&S Officer for Contractor
3.7 Non-compliance incidents minimized	Zero incidents of non-compliance.	Number of incidents reported	<ul style="list-style-type: none"> Audit Non-compliance register 	E&S Officer for Contractor
3 Post-Construction				
3.1 Temporary infrastructure has been removed post-construction	100% of temporary works have been decommissioned, removed and these areas closed once construction has been completed.	Extent (area) of temporary works	<ul style="list-style-type: none"> Site inspection Audit 	E&S Officer for Contractor
3.2 Habitat reinstatement has been completed	Post-construction habitat reinstatement completed to a suitable standard (e.g., >90% vegetation cover achieved and maintained).	Percentage vegetation cover	<ul style="list-style-type: none"> Site inspection Habitat/vegetation survey and mapping Audit 	<ul style="list-style-type: none"> E&S Officer for Contractor Expert (ecologist or botanist)
3.3 Native vegetation used in recultivation	100% native plants used in recultivation / revegetation (unless areas are returned to agricultural production).	Percentage or number of native vs exotic plants	<ul style="list-style-type: none"> Site inspection Audit 	<ul style="list-style-type: none"> E&S Officer for Contractor Expert (ecologist or botanist)
3.4 Plant translocation/planting has been successful	Targets for success of plant translocation/planting (number of plants, survival rate) to be determined during planning based on species.	Number of plants, survival rate of plants	<ul style="list-style-type: none"> Plant survey 	<ul style="list-style-type: none"> Expert (ecologist or botanist)

TABLE 10-2 MONITORING FRAMEWORK FOR OPERATION

ASPECT	KPI AND TARGET	METRIC	METHOD OF MONITORING	RESPONSIBILITY
1 Maintenance Activities				
1.1 Invasive Alien Species (IAS) monitoring undertaken	IAS monitoring is undertaken in accordance with the BMP to identify any infestations requiring control.	Invasive monitoring survey implemented or not	<ul style="list-style-type: none"> IAS survey and report Audit 	<ul style="list-style-type: none"> WPP Operator Expert (ecologist or botanist)
1.2 IAS controlled on site	The spread and introduction of IAS on the construction site has been actively controlled.	Extent or percentage cover of the site by IAS	<ul style="list-style-type: none"> IAS survey and report Site inspection 	<ul style="list-style-type: none"> WPP Operator Contractor
1.3 Access control implemented	100% avoidance of adjacent natural habitats outside of the project area.	Extent (area) of natural habitats	<ul style="list-style-type: none"> Site inspection Audit 	<ul style="list-style-type: none"> WPP Operator
2 During Operation				
2.1 Monitoring in accordance with the Adaptive Bird and Bat Management Plan (ABBMP)	Monitoring of birds and bats implemented according to the methodology and at the agreed frequency as per the Adaptive Bird and Bat Management Plan (ABBMP).	Post-construction fatality monitoring based on surveys	<ul style="list-style-type: none"> Audit Annual monitoring report 	<ul style="list-style-type: none"> WPP Operator Independent experts (birds & bats)
2.2 ABBMP monitoring reporting	Annual monitoring report for birds and bats compiled as per the ABBMP requirements.	Monitoring report available or not	<ul style="list-style-type: none"> Audit Annual monitoring report 	<ul style="list-style-type: none"> WPP Operator Independent experts (birds & bats)
2.3 Bird fatalities	Annual fatality rate does not exceed established fatality threshold for birds.	No. bird carcasses Annual fatality estimate	<ul style="list-style-type: none"> Post-construction fatality monitoring and fatality estimation 	<ul style="list-style-type: none"> Independent experts (birds)
2.4 Bat fatalities	Annual fatality rate does not exceed established fatality threshold for bats.	No. bat carcasses Annual fatality estimate	<ul style="list-style-type: none"> Post-construction fatality monitoring and fatality estimation 	<ul style="list-style-type: none"> Independent experts (bats)
2.4 ABBMP to inform adaptive management	Annual monitoring report for birds and bats used to inform adaptive management as per the ABBMP recommendations.	Adaptive management actions register available or not	<ul style="list-style-type: none"> Audit Annual monitoring report Records of actions 	<ul style="list-style-type: none"> WPP Operator Independent experts (birds & bats)
2.5 Implement adaptive management measures	Appropriate adaptive management implemented as required and aligned with the ABBMP, informed by operational monitoring	Number of adaptive management actions implemented	<ul style="list-style-type: none"> Audit Annual monitoring report Records of actions 	<ul style="list-style-type: none"> WPP Operator Independent experts (birds & bats)
2.6 ABBMP review and updates	Annual review of the ABBMP with updates as necessary.	Reviewed and updated management plan available or not	<ul style="list-style-type: none"> Audit 	<ul style="list-style-type: none"> WPP Operator Independent experts (birds & bats)

TABLE 10-3 MONITORING FRAMEWORK FOR DECOMMISSIONING

ASPECT	KPI AND TARGET	METRIC	METHOD MONITORING	OF	RESPONSIBILITY
Decommissioning					
1 Temporary sites have been established appropriately	100% of temporary works are demarcated and established in appropriate areas as per the site plan.	Percentage of work areas demarcated prior to construction	<ul style="list-style-type: none"> Site inspection Audit 		<ul style="list-style-type: none"> E&S Officer for Contractor
2 Invasive Alien Species (IAS) monitoring undertaken	IAS monitoring is undertaken in accordance with the BMP to identify any infestations requiring control.	Invasive monitoring survey implemented or not	<ul style="list-style-type: none"> Monitoring report Audit 		<ul style="list-style-type: none"> E&S Officer for Contractor Expert (ecologist or botanist)
3 IAS controlled on site	The spread and introduction of IAS on the site has been actively controlled.	Extent or percentage cover of the site by IAS	<ul style="list-style-type: none"> Site inspection IAS survey 		<ul style="list-style-type: none"> E&S Officer for Contractor Expert (ecologist or botanist)
4 Access control implemented	100% avoidance of adjacent natural habitats outside of the decommissioning area/zone.	Extent (area) of natural habitats	<ul style="list-style-type: none"> Site inspection Audit 		<ul style="list-style-type: none"> E&S Officer for Contractor
5 Vegetation stripping/clearing	No stripping / clearing of natural vegetation (e.g., woodland/forest/grassland) takes place outside of the authorized decommissioning zone/footprint.	Extent (area) of natural vegetation	<ul style="list-style-type: none"> Site inspection 		<ul style="list-style-type: none"> E&S Officer for Contractor
6 Spill incidents, soil/water contamination incidents	Zero spill / contamination incidents.	Number of incidents reported	<ul style="list-style-type: none"> Site inspection Audit 		<ul style="list-style-type: none"> E&S Officer for Contractor
7 Environmental training requirements identified	Training requirements have been identified and a training schedule is kept current.	Training schedule available or not	<ul style="list-style-type: none"> Audi Training needs assessment and training matrix 		<ul style="list-style-type: none"> E&S Officer for Contractor
8 Environmental training conducted	100% of employees accessing the site have received the necessary induction and generic training (and any specialized training) as required.	Percentage of employees having received training	<ul style="list-style-type: none"> Audit Training register 		<ul style="list-style-type: none"> E&S Officer for Contractor
9 Non-compliance incidents minimized	Zero incidents of non-compliance.	Number of incidents reported	<ul style="list-style-type: none"> Audit Non-compliance register 		<ul style="list-style-type: none"> E&S Officer for Contractor
10 Infrastructure has been removed prior to site closure	100% of works have been decommissioned, removed and these areas closed.	Extent (area) of works	<ul style="list-style-type: none"> Site inspection Audit 		<ul style="list-style-type: none"> E&S Officer for Contractor
11 Habitat reinstatement has been completed	Habitat reinstatement completed to a suitable standard (e.g., >90% vegetation cover achieved and maintained).	Percentage vegetation cover	<ul style="list-style-type: none"> Site inspection Habitat/vegetation survey and mapping Audit 		<ul style="list-style-type: none"> E&S Officer for Contractor Expert (ecologist or botanist)
12 Native vegetation used in recultivation	100% native plants used in recultivation / revegetation (unless areas are returned to agricultural production).	Percentage or number of native vs exotic plants	<ul style="list-style-type: none"> Site inspection Audit 		<ul style="list-style-type: none"> E&S Officer for Contractor Expert (ecologist or botanist)

11. REPORTING AND COMMUNICATION

Reporting and communication allow for Enerjisa and its external consultants 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 BAPF 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;
- Corporate level sustainability reporting requirements relevant to the company (where relevant); and
- Any biodiversity disclosure requirements relevant to the company (where relevant).

11.1 INTERNAL REPORTING AND COMMUNICATION

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

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

The following reporting requirements will likely apply for the EPC Contractor during the construction phase of each WPP:

- Incident reporting;
- Emergency response reporting;
- Records of annual emergency response training exercises;
- Biannual reports on KPIs and performance trends;
- Monthly reports of relevant training activities completed and attendance registers to be maintained;
- Daily/Weekly/Monthly reports of site inspection activities;
- Audit reports;
- Inspection logs and status of non-compliances.

11.2 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)
- Biodiversity disclosure requirements (where relevant: e.g. TNFD)

Key tasks related to reporting and communication for the BAPF 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.

Special Note on International Financial Institutions (IFI) Reporting Requirements

Where projects are financed through IFIs, the reporting and communication requirements with respect to biodiversity management actions will need to be considered. The reporting and communication requirements of the IFC, in terms of the Performance Standards of the IFC (2012) are included here as an example, however the reader must be aware that depending on which IFI is financing the project, requirements may vary and can be specific to the IFI.

Reporting and communication requirements according to the IFC Performance Standards:

Reporting and review of the ESMS: requires periodic performance reviews of the effectiveness of the ESMS, based on systematic data collection and analysis;

The scope and frequency of reporting is dependent on the nature and scope of the activities identified and undertaken in accordance with the ESMS and other applicable project requirements;

Reporting to the public (not less than annually) focuses on Affected Communities on issues that consultation processes or grievance mechanisms have identified as a concern;

Disclosure of relevant project information helps Affected Communities and other stakeholders understand the risks, impacts and opportunities of the project.

12. STAKEHOLDER ENGAGEMENT

12.1 IDENTIFICATION OF STAKEHOLDERS

The objective of stakeholder identification is to establish which organizations and individuals may engage with on issues with regards to development affecting designated areas, where relevant.

The stakeholders can be categorized as primary and secondary stakeholders, based on the nature of impacts by the Project and the degree of interest and influence of these stakeholders on the Project. These stakeholder classifications are further elaborated below.

- Primary stakeholders are those that are likely to be directly impacted by a project.
- Secondary stakeholders are those persons or organizations that may be interested in or able to influence the outcome of the Project, either because they can contribute knowledge or improve Project design or mitigate social and/or environmental impacts.

Stakeholder identification is an ongoing process, requiring regular review and updating as the Project proceeds. The main groups of stakeholders identified so far for the Project are listed in Table 12-1. The list will be updated and modified in the course of the Project development.

TABLE 12-1 STAKEHOLDER GROUPS

Group of Stakeholders	Stakeholders
Primary Stakeholders	
Landowner and users	<ul style="list-style-type: none"> • Individuals, legal entities and local administration holding land title documents; • Tenants or occupiers without formal rights; • Land users (grazing, farming or other activities).
Local population	<ul style="list-style-type: none"> • All local residents potentially exposed to impacts due to Project construction and operation;
Organisations involved in Project implementation	<ul style="list-style-type: none"> • Construction and design companies involved in implementation of the Project; • Contractors and contractor's staff; and • Construction and operation companies
Administrative bodies and authorities	<ul style="list-style-type: none"> • Government Authorities: <ul style="list-style-type: none"> ○ Local Government Authorities ○ Ministry of Agriculture and Forestry - MAF (Tarım ve Orman Bakanlığı); ○ General Directorate of Nature Protection and National Parks - GDNPNP (Doğa Koruma ve Milli Parklar Genel Müdürlüğü); • Local Government Authorities: <ul style="list-style-type: none"> ○ Harmancık WPP: Çanakkale Province; Merkez and Lapseki Districts ○ Armutcuk WPP: Çanakkale Province; Yenice District ○ Kestanederesi WPP: Aydın Province; Nazilli and Kuyucak Districts /Manisa Province; Alaşehir District/ İzmir Province; Kiraz District ○ Ovacık WPP: Çanakkale Province; Bayramiç District ○ Dampınar WPP: İzmir Province; Tire District / Aydın Province; Germencik District ○ Akköy WPP: Aydın Province; Didim District ○ Hacıhıdırlar WPP: Aydın Province; Karacasu District/ Denizli Province; Sarayköy and Babadağ Districts

Group of Stakeholders	Stakeholders
	<ul style="list-style-type: none"> ○ Ihlamur WPP: Çanakkale Province; Yenice District/ Balıkesir Province; Gönen District ○ Uygur WPP: Balıkesir Province; Burhaniye and Savaştepe Districts/ İzmir Province, Bergama District/ Manisa Province, Soma District • Forestry Authorities: • General Directorate of Forestry - GDF (Orman Genel Müdürlüğü), • Regional directorate of Forestry; and ○ Harmancık WPP: Çanakkale Forest Management Directorate ○ Armutçuk WPP: Yenice Forest Management Directorate ○ Keşan WPP: Nazilli Forest Management Directorate / Bayındır Forest Management Directorate ○ Ovacık WPP: Bayramiç Forest Management Directorate ○ Dampınar WPP: Bayındır Forest Management Directorate / Aydın Forest Management Directorate ○ Akköy WPP: Aydın Forest Management Directorate ○ Hacıhıdırlar WPP: Nazilli Forest Management Directorate / Denizli Forest Management Directorate ○ Ihlamur WPP: Yenice Forest Management Directorate / Gönen Forest Management Directorate ○ Uygur WPP: Gönen Forest Management Directorate, Edremit Forest Management Directorate, Balıkesir Forest Management Directorate /İzmir Forest Management Directorate, Bergama Forest Management Directorate, Soma Forest Management Directorate • Village mukhtar
Secondary Stakeholders	
Non-Governmental Organisations (NGOs) and independent experts	<ul style="list-style-type: none"> • Birdlife International • Nature Conservation Centre Foundation (Doğa Koruma Merkezi) • World Wildlife Fund-Türkiye (WWF Türkiye) • Nature Research Society (Doğa Araştırmaları Derneği) • Nature Society (Doğa Derneği) • Business Associations; • Chambers of Commerce; • Village level Agricultural and Forestry Cooperatives; • Universities.
Media	<ul style="list-style-type: none"> • Print media; • Radio, TV; and • Internet sources.

12.2 STAKEHOLDERS POTENTIAL ISSUES

Various stakeholder potential issues necessitate discussion, including:

- **Land Use Policy:** Conducting a comprehensive examination of land use policies is imperative to identify instances where technically viable offsets encounter obstacles stemming from policy incongruities (Robichaud and Knopff, 2015). Engaging in collaborative efforts with governmental authorities can help in identifying policy impediments that hamper the efficient implementation of offsets. Critical considerations such as land governance and procurement for potential offset sites take precedence. Establishing an early engagement framework with landowners and local authorities is crucial, alongside implementing compensatory measures.
- **Forestry Management:** Reforestation initiatives using tree species indigenous to the ecoregion and restoration of habitat types must align with the directives of local authorities and relevant stakeholders.

- Management of Protected Areas and Internationally Recognized Areas: Collaborating with governmental entities and local stakeholders entails providing support for the management of Protected Areas and internationally recognized sites (KBA, IBA, IPA). Enerjisa's offset activities may include:
 - Grazing Limitations: Mitigating excessive land degradation due to overgrazing may necessitate the implementation of grazing restrictions. Compensation mechanisms will be discussed with stakeholders.
 - Regulation of Hunting: Protecting areas may necessitate limitations on legal hunting activities. It is important to engage stakeholders in discussions concerning compensation mechanisms, while closely evaluating potential escalations in illicit activities.
 - Ecotourism Development: The creation of protected zones has the potential to catalyze the expansion of tourism. Stakeholder consultations will be conducted to address challenges and opportunities, identifying obstacles and fostering growth.

12.3 RECORDING OF STAKEHOLDER ENGAGEMENT

Stakeholder engagement is a component of the biodiversity action plan (BAP) implementation process. As part of the BAP items, it is essential to identify specific areas where stakeholder engagement is required, such as when preparing Biodiversity Management Practices (BMPs) and site-level BAPs, as well as habitat restoration plans and any offset plans if required.

During the engagement process, efforts should be made to gather input, feedback, and insights from stakeholders regarding the BAP items. A record of the engagement activities, including participant contributions and outcomes, must be diligently maintained. An example of stakeholder engagement recording form and an example of attendance register form are given in Table 12-2 and Table Table 12-3 respectively and can be used as templates.

TABLE 12-2 STAKEHOLDER ENGAGEMENT RECORD FORM TEMPLATE

Item No.	Meeting Date/Time/Venue	Stakeholder Engagement Session	Stakeholders/groups Engaged	Topics Discussed	Key Issues Raised	Follow Up/ To Do

TABLE 12-3 ATTENDANCE REGISTER FORM TEMPLATE

Name	Last Name	Organization	Contact Information	Session Attended	Signature

13. NEXT STEPS

At the time of this report (Q2 2024), the Project has progressed so far on:

- Harmancık WPP (construction works ongoing)
- Armutçuk WPP (construction to commence shortly)
- Kestanederesi WPP (construction works ongoing)
- Ovacık WPP (construction works ongoing)
- Dampınar WPP (construction works not started)
- Akköy WPP (operational)
- Hacıhıdırlar WPP (not started)
- Ihlamur WPP (not started)
- Uygur WPP (construction works ongoing)

Based on the current/expected progress of the Project construction activities, ERM suggests the steps in Table 13-1.

TABLE 13-1 NEXT STEPS FOR THE IMPLEMENTATION OF THE BAPF

S/N	Action	Sites	Responsibility	Timeline	Date Due
1	Fill positions for key roles as per Chapter 9 of the BAPF	All WPPs	Enerjisa	As soon as possible (ASAP)	As soon as possible (ASAP)
2	Complete supplementary field surveys for habitat, flora, fauna	All WPPs	The Project to engage a qualified consultant/ecologist	Refer to additional field surveys schedule in Chapter 5 (Table 5-1)	Access road surveys: June 2024 Flora survey: November 2024 Bird VP surveys: November 2024 Breeding bird surveys: July 2024 Bat surveys: October 2024
3	Prepare plant translocation / seed collection and propagation/planting guidance and methods	Harmancık WPP	Enerjisa (with external support)	Construction	September 2024
		Armutcuk WPP		Construction	September 2024
		Kestanederesi WPP		Construction	October 2024
		Dampınar WPP		Pre-construction/ Construction	October 2024
		Akköy WPP		Operation	July 2024
		Hacıhıdırlar WPP		Pre-construction Construction	July 2024
		Ihlamur WPP		Pre-construction/ Construction	October 2024
		Uygar WPP		Construction	September 2024

S/N	Action	Sites	Responsibility	Timeline	Date Due
4	Collision Risk Assessment (CRA) based on modelling of collision risk.	All WPPs	Enerjisa (with external support)	Requires alignment with supplementary field surveys	December 2024 / January 2025
5	Updating of biodiversity baseline and impact assessments (as standalone reports separate to the ESIA and CHA) based on the additional survey results and to close information gaps identified.	All WPPs	Enerjisa (with external support)	Requires alignment with supplementary field surveys	December 2024 / January 2025
6	Complete Cumulative Impact Assessment (CIA)	All WPPs	Enerjisa (with external support)	Requires alignment with supplementary field surveys	January - February 2025
7	Confirm CH species and NG strategy requirements following the updated surveys, updates to the CHA and impact assessment for biodiversity, and CRA.	Harmancık, Ovacık, Ihlamur, Akköy, Uygur	Enerjisa (with external support)	Requires alignment with items 2, 4 and 5	January - February 2025
8	Consult with relevant stakeholders (i.e. Doğa Derneği) concerning conservation opportunities and possible interventions for KBAs/IBAs identified as potential locations for actions towards meeting NG for migratory CH trigger bird species.	Harmancık, Ovacık, Ihlamur, Akköy, Uygur	Enerjisa (with external support)	Requires alignment with items 2, 4, 5 and 7	January - February 2025
9	Prepare individual Biodiversity Action Plans (BAPs) tailored to each project site, incorporating specific conservation measures and mitigation strategies, including strategy for NNL/NG.	All WPPs	Enerjisa (with external support)	Requires alignment with items 2, 4, 5 and 6	February 2025
10	Updating Biodiversity Management Plans (BMPs) for each WPP for the construction phase based on the BAPF actions and recommendations.	All WPPs (except Akköy WWP which is operational)	Enerjisa (with external support)	ASAP	ASAP
11	Updating Biodiversity Management Plans (BMPs) for each WPP for the operational phase based on the BAPF actions and recommendations.	All WPPs	Enerjisa (with external support)	Requires alignment with items 2, 4, 5 and 6	January - February 2025

S/N	Action	Sites	Responsibility	Timeline	Date Due
12	Develop Biodiversity Management Plans (BMPs) for each WPP for the decommissioning phase.	All WPPs	Enerjisa (with external support)	Future – minimum 1 year prior to decommissioning	Future – minimum 1 year prior to decommissioning

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15. ANNEXURES

Annexure 1. Summary of biodiversity baseline information and risks/impacts for each WPP

15.1 HARMANCIK WIND POWER PLANT

Summary for Wind Farm Harmancik	
Name	Harmancik Wind Power Plant (WPP) Project
Description	10 turbines and 42 MWm/42 MWe total installed power, a switchyard, Project roads (i.e., access and site roads), a 68.75 tons/hour capacity mobile crushing and screening facility, to be used as necessary, as well as an overhead transmission line (OHL).
Location	In Çanakkale Province, Merkez and Lapseki Districts, Yukarıokçular, Kızılköçü, Üçpınar and Hacıgelen Neighborhoods and Biga mountains.
Status	Not yet operational
Available Baseline Information for Biodiversity	
1 Protected Areas (just KBA status)	<p>The Project area is located within the Biga Dağları ('Biga Mountains') (MAR009) and partially within the Cannakkale Strait, both designated Key Biodiversity Areas (KBAs):</p> <ul style="list-style-type: none"> Biga Dağları (Biga Mountains) are situated in the central region of the Biga Peninsula, bordered by the Çanakkale Strait to the north and the Gulf of Edremit to the south. The Biga Mountains, with peaks reaching 934 meters, form a small mountain range extending north-south. The area's rugged terrain is shaped by numerous streams flowing from the mountains towards the southern shores. Habitats include forests, shrub-covered pastures, maquis communities, and agricultural areas. Turkish pine dominates the lowlands, while hairy oaks are prevalent at higher elevations. Plant species like <i>Crocus candidus</i>, and <i>Galanthus trojanus</i> are present and are meeting the KBA criteria. The Syrian woodpecker and woodlark breed in this area, as well fulfilling the KBA criteria at a regional scale. The Cannakkale Strait KBA was designated a KBA and IBA for the conservation of the coastal bird, Yelkouan Shearwater (<i>Puffinus yelkouan</i>, globally VU), which is a passage migrant.
2 Habitat	<p>2.1 Natural habitat</p> <p>Most of the Project area is being located in Woodland (mainly <i>Q. pinus</i> and <i>Pinus sp.</i>); Maquis; Grassland; Agricultural land; with flowing and intermittent (temporary) streams.</p> <p>The following EUNIS habitat types are present in the AoI: G1.3 Mediterranean riparian woodland; G1.7 Thermophilus deciduous woodland; G3.5 <i>Pinus nigra</i> woodland, G3.7 <i>Pinus brutia</i> woodland; G3.F Highly artificial coniferous plantations; H3.6 Weathered rock and outcrop habitats; I1.1 Intensive unmixed crops; I1.3 Arable land with unmixed crops grown by low-intensity agricultural methods; I2.2 Small-scale ornamental and domestic garden areas.</p>
	<p>2.2 Critical habitat</p> <p>A Critical Habitat Assessment has been conducted based on the EBRD PR6 guidelines available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies.</p> <p>CHA for birds for criteria 1-3 was based on existing studies which were performed for other nearby Wind Farms and their bird surveys.</p> <p>Critical habitat is potentially triggered for the following bird species:</p> <ul style="list-style-type: none"> Lesser Spotted Eagle (<i>Clanga pomarina</i>, nationally EN) Short-toed Snake Eagle (<i>Circaetus gallicus</i>, nationally VU) <p>Critical habitat was also potentially triggered for one flora species:</p> <ul style="list-style-type: none"> <i>Verbascum hasbenlii</i>, CR

Summary for Wind Farm Harmancik		
		<p>Flora species observed during field surveys considered as PBFs are the following:</p> <ul style="list-style-type: none"> • <i>Digitalis trojana</i>, VU • <i>Verbascum lyidium</i> var. <i>heterandrum</i>, VU • <i>Ferulago trojana</i>, VU • <i>Crocus candidus</i>, VU • <i>Cirsium balikesirense</i>, VU <p>Bird species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Eleonora's Falcon (<i>Falco eleonora</i>, nationally EN) • Red-footed Falcon, VU IUCN (<i>Falco vespertinus</i> nationally not evaluated) • Eurasian Giffon (<i>Gyps fulvus</i>, nationally EN) • Black Kite (<i>Milvus migrans</i>, nationally EN) • European Turtledove (<i>Streptopelia turtur</i>, nationally VU) • White Stork (<i>Ciconia ciconia</i>, not evaluated) <p>Bat species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Schreiber's Bent-winged Bat, VU (<i>Miniopterus schreibersii</i>) • Savi's Pipistrelle, LC (<i>Hypsugo savii</i>) • Giant Noctule, VU (<i>Nyctalus lasiopterus</i>) • Lesser Noctule, LC (<i>Nyctalus leisleri</i>) • Noctule, LC (<i>Nyctalus noctula</i>) • Nathusius' Pipistrelle, LC (<i>Pipistrellus nathusii</i>) • Common Pipistrelle, LC (<i>Pipistrelle pipistrelle</i>) • Soprano Pipistrelle, LC (<i>Pipistrellus pygmaeus</i>) • Particoloured Bat, LC (<i>Vespertilio murinus</i>) <p>Terrestrial species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Common tortoise, VU IUCN (<i>Testudo graeca</i>) • Roe deer, LC IUCN (<i>Capreolus capreolus</i>) <p>Based on EUNIS level 3 habitat classification, six natural habitat types were determined based on desk study and field observation. The habitat type G3.5 <i>Pinus nigra</i> woodland is considered as <i>priority habitat</i>. Following habitat types are not considered as priority habitats:</p> <ul style="list-style-type: none"> • G3.5 <i>Pinus nigra</i> woodland (not defined as Critical habitat), LC • G3.7 <i>Pinus brutia</i> Woodland (Lowland to montane Mediterranean Pinus Woodland) (Excluding <i>Pinus nigra</i>), LC • G1.3 Mediterranean Riparian Woodland, VU • G1.7 Termophilus Deciduous Woodland, LC • G3.F Highly artificial coniferous plantations, na
	2.3 Ecosystem services	During field surveys, ecosystem services such as farming, beekeeping, forestry, and animal grazing were observed in the Project Area and its close vicinity.
3 Species	3.1 Flora	<p>National flora surveys were performed between 15-23 October 2021, with one regionally endemic species triggering the Critical habitat found in woodland habitats and open spaces where <i>Pinus</i> species are dominant.</p> <p>Critical habitat was triggered for the following flora species:</p> <ul style="list-style-type: none"> • <i>Verbascum hasbenlii</i> (CR nationally) <p>Regionally endemic species found during field surveys:</p> <ul style="list-style-type: none"> • <i>Digitalis trojana</i> (VU nationally) • <i>Cirsium balikesirense</i> (VU nationally) • <i>Verbascum lyidium</i> var. <i>Heterandrum</i> (VU nationally) • <i>Ferulago trojana</i> (VU nationally)

Summary for Wind Farm Harmancik	
	<ul style="list-style-type: none"> • <i>Crocus candidus</i> (VU nationally) <p>Widespread endemic species mainly found on rocky places and open grassland observed during field surveys:</p> <ul style="list-style-type: none"> • <i>Centaurea olympica</i> (LC nationally) • <i>Campanula lyrata subsp. Lyrata</i> (LC nationally) • <i>Stachys tmolea</i> (LC nationally) • <i>Thymus zygoides var. lycaonicus</i> (LC nationally)
3.2 Birds	<p>The position of the planned Harmancik WPP is located on the Dardanelles migratory route for migratory large soaring birds.</p> <p>As part of the National EIA, monitoring studies were performed between the August 18th – 27th of September 2021 as well as 24th of March and 7th of April 2022, 15 times each.</p> <p>The species identified on site and considered to be of high sensitivity include several raptors and storks are:</p> <p>Sparrowhawk (<i>Accipiter brevipes</i>), Cinereous Vulture (<i>Aegypius monachus</i>), Imperial Eagle (<i>Aquila heliaca</i>), Purple Heron (<i>Ardea purpurea</i>), Black Stork (<i>Ciconia nigra</i>), Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Lesser Spotted Eagle (<i>Clanga pomarina</i>), White Stork (<i>Ciconia ciconia</i>), Greater Spotted Eagle (<i>Clanga clanga</i>), Eleonora's Falcon (<i>Falco eleonora</i>), Red-footed Falcon (<i>Falco vespertinus</i>), Griffon Vulture (<i>Gyps fulvus</i>), and Black Kite (<i>Milvus migrans</i>).</p> <p>During the comprehensive bird monitoring conducted by the Consultant near the Wind Power Plant (WPP), over 100 Red-footed Falcons (<i>Falco vespertinus</i>) were observed passing through within a short timeframe during autumn migration monitoring. This marked a particularly high count for Canakkale province during that period. Additionally, it is expected that dispersal activity of juvenile Imperial Eagles (<i>Aquila heliaca</i>) from Thracian populations, as well as Griffon Vultures (<i>Gyps fulvus</i>) from Balkan populations, may take place.</p>
3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in August, September, and October 2021 for a total of 6 day/nights.</p> <p>The following important species were observed on site:</p> <ul style="list-style-type: none"> • <i>Miniopterus schreibersii</i> (VU globally), • Long-distance migrants (e.g. <i>Pipistrellus nathusii</i>), • And species with high collision risk (e.g. <i>Pipistrellus</i> and <i>Nyctalus sp</i>) <p>No KBA trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review. All other species observed during the monitoring studies are classified as LC globally, according to the IUCN Database.</p>
3.4 Other faunal species	<p>During the national EIA seven amphibian species, 24 reptile species and 29 non-volant species have been observed as relevant as part of the desktop studies conducted.</p> <p>Most of these species are common and widespread. None of the species is considered to be endemic.</p> <p>The Common tortoise (<i>Testudo graeca</i>) VU was observed during the monitoring surveys conducted as part of the national EIA, beside the Roe deer (<i>Capreolus capreolus</i>) LC IUCN which is considered to be of national importance being under threat of hunting in the Canakkale province.</p>

Summary for Wind Farm Harmancik	
	<p>The habitats within the Project area, identified by the local expert, match those of certain species classified as Vulnerable (VU), although these species themselves were not observed at the site: Mouse-tailed dormouse (<i>Myomimus roachi</i>) VU, Marbled polecat (<i>Vormela peregusna</i>) VU, and the Brown bear (<i>Ursus arctos</i>) LC but of national importance.</p> <p>Since the Project area is known to have some freshwater streams, no surveys were carried out for freshwater fish species as part of the National EIA. The data is based on desktop studies.</p>
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA	
Protected Areas	<p><u>Construction phase</u></p> <p>The Project area is situated between the Biga Mountains KBA. The Critical habitat qualifying species are likely to be present within the 2 km AoI. Construction activities will impact the KBA in form of habitat loss and degradation (vegetation clearing, air pollution, invasive species, access roads, soil pollution, accidental spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance). The magnitude of the construction impacts is considered to be <i>moderate</i>, with the impact significance being <i>major</i>.</p> <p><u>Operation phase</u></p> <p>Operational impacts are considered to be low for flora species. One single qualifying flora species (<i>Crocus candidus</i>) exists within the 2 km Area of Influence (AoI), and it is presumed that operational activities will not exert an impact significant enough to potentially endanger the existence of this species.</p> <p>The impacts for bird and bat species associated with the KBA are likely to be impacted by operation activities due to injury and mortality risks associated with the movement of turbine blades, and overhead lines of the Project.</p> <p>The Short-toed Snake Eagle (<i>Circaetus gallicus</i>) and Black Stork (<i>Ciconia nigra</i>) are both migrants and breeding species in the region, although the Project area may not be suitable for sustaining significant breeding activity for large soaring species. However, both species might frequently use the area for foraging or accessing foraging areas. While the European turtle dove (<i>Streptopelia turtur</i>) also breeds in the region, available long-term mortality monitoring studies from operational Wind Power Plants (WPPs) in the area do not indicate high mortality risks for this species. The magnitude of the impacts is considered to be <i>minor</i>, with the impact significance being <i>major</i>.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, • Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.

Summary for Wind Farm Harmancik	
Natural habitat	<p><u>Construction phase</u> Construction activities will pose an impact to the natural habitats in form of habitat loss and degradation. G1.7 Thermophilus deciduous woodland: 5.25 ha will be lost due to site roads which makes 32.4% and 4.86 ha due to turbine footprint which makes 32.1 %. G3.5 Pinus nigra woodland: 0.43 ha will be lost due to access roads which makes 12.7%, 3.36 ha will be lost due to site roads which makes 20.8%, 3.57 ha will be lost due to turbine footprint which makes 23.6%, and 0.2% will be lost due to the switchyard area. The significance of the construction impacts s considered to be <i>moderate</i>.</p> <p><u>Operation phase</u> The operation of the wind farm is expected to have a habitat fragmentation effect mostly in the areas covered by forests. The significance of the construction impacts s considered to be <i>moderate</i>.</p>
	<p><u>Residual Impact Significance</u> The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species. The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, • Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.
Critical habitat	<i>Impacts to critical habitat not assessed.</i>
Flora	<p><u>Construction phase</u> One nationally Critically Endangered (CR) and five Vulnerable (VU) species were identified during the field surveys conducted for the national EIA. <i>Verbascum hasbenlii</i> represents a critical habitat qualifying species present on site and will be affected by the project activities. The impacts considered are the introduction of IAS (Invasive Alien Species), temporary and permanent loss of areas of terrestrial habitats, and the loss of flora species which are present at site. The effects are considered to be felt in the direct footprint of the planned project. The impact significance is considered to be <i>major</i>.</p> <p><u>Operation phase</u> The Project activities are not anticipated to result in a net loss or decrease in the global, national, or regional population of any species. The impact significance is considered to be <i>moderate</i>.</p> <p><u>Residual Impact Significance</u> The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species. The residual impact is considered to be <i>moderate for high sensitive species</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss,

Summary for Wind Farm Harmancik	
	<ul style="list-style-type: none"> • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, • Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process. • A 'Landscape Plan' should be developed to restore the vegetation area.
Birds	<p><u>Construction phase</u></p> <p>The impacts related to birds are considered to be only temporary during construction, in terms of edge effects, habitat loss and degradation the forest patches inside the footprint area are going to be cleared for construction. Since the forest is not considered 'mature' therefore presents limited breeding opportunities for birds. Temporary disturbance during construction is considered to be in terms of blasting, air pollution, noise.</p> <p>The forest clearing is expected to have <i>minor</i> impact on some high sensitive species since the forest is young and is not considered to present breeding sites for those critical habitat qualifying species. The impact significance during construction is considered to be <i>minor</i>.</p> <p><u>Operation phase</u></p> <p>As the planned WPP is located along a path commonly used by migrating and large soaring birds, there are concerns about how the plant's operation might affect these highly sensitive species.</p> <p>The mortality and injury rates are considered to be high at the Harmancik WPP during operation due to the artificial lights which may attract and disorient the species during their nocturnal migrations. Other potentially occurring impacts are displacement, avoidance and barrier effects for migrants, collision, and electrocution.</p> <p>Barrier effects should as well be considered as cumulative impacts considering the high development rate nearby.</p> <p>The impact during operation is considered to be <i>major</i> for highly sensitive species and <i>moderate</i> for soaring migrants.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate</i> for bird collision and electrocution mortality, and <i>minor</i> in regard to highly sensitive birds and their habitat loss after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • A good pre-operational and operational monitoring program is needed in order to assess the full scope of risks and manage them including: • Artificial lighting will be managed carefully to avoid attracting and dazing migrants, • The OHL will be marked throughout to increase visibility, • A Shut-down on demand or equivalent turbine management program will be implemented and maintained unless operation monitoring results strongly suggest negligible/low impact, • The Project components will be managed to not offer perching and nesting opportunities, • Safe perching, roosting and nesting opportunities will be provided, • A turbine curtailment approach for minimizing bird mortality will be developed, • Trainings will be provided to raise awareness of all site personnel.

Summary for Wind Farm Harmancik	
Bats	<p><u>Construction phase</u></p> <p>The impacts to bats are considered to be temporary, although the bat species present at site are globally LC species, the impact significance is considered to be <i>negligible</i>.</p> <p>Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route.</p> <p>Direct loss of nests and shelters is considered to be limited to the footprint.</p> <hr/> <p><u>Operation phase</u></p> <p>One of the primary factors impacting biodiversity during the operational phase involves the risks of bat species facing collision, electrocution, barotrauma injuries and mortality. While collision with moving turbine blades poses the greatest risk of mortality, other structures such as turbine towers, pylons, fences, and those associated with the switchyard can also cause injury or death.</p> <p>The significance of the operation impacts is considered to be <i>major</i> when it comes to collision / barotrauma mortalities, <i>moderate</i> in regard to artificial light and <i>negligible</i> in terms of habitat loss.</p> <hr/> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>major</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • A good pre-operational and operational monitoring program is needed to assess the full scope of risks and manage them including: • Artificial lighting will be managed carefully to avoid attracting and dazing migrants, • The OHL will be marked throughout to increase visibility, • A Shut-down on demand or equivalent turbine management program will be implemented and maintained unless operation monitoring results strongly suggest negligible/low impact, • The Project components will be managed to not offer perching and nesting opportunities, • Safe perching, roosting and nesting opportunities will be provided, • A turbine curtailment approach for minimizing bat mortality will be developed, • Trainings will be provided to raise awareness of all site personnel.
Other faunal species	<p><u>Construction phase</u></p> <p>Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through habitat loss or degradation, disturbances caused by human presence, artificial lighting, dust, and noise. Additionally, there's a risk of injury or mortality to these species during construction and due to increased traffic, as well as temporary habitat fragmentation.</p> <p>The species identified, are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU).</p> <p>The impacts considered during construction phase are habitat loss as a result of vegetation clearing, temporary disturbance due to construction activities like noise, air pollution and injuries caused by car accidents and loss of nests and breeding sites for small faunal groups.</p> <p>The impact significance is considered to be <i>minor</i>.</p> <hr/> <p><u>Operation phase</u></p> <p>The disturbance during operation will include vehicular traffic, light and noise, air pollution, and the possibility for deaths caused by traffic.</p> <p>The significance of this impact is considered to be <i>minor</i>.</p>

Summary for Wind Farm Harmancik	
	<p>Residual Impact Significance</p> <p>The residual impact is considered to be <i>negligible</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss. • On-site vehicle speed limits should be implemented to avoid potential road-kills. • Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period. • Installing artificial structures within the AoI for nesting, roosting or hibernating fauna such as shelter for terrestrial fauna. • Siting decisions should be made to minimize the injury and mortality risks (consider proximity to roads, OHL and turbines). • Site employees should be trained to be aware of significance of habitats and species, nests of fauna species, to avoid any destruction or displacement.
Introduction of IAS	<p>Construction phase</p> <p><i>Construction impacts have not been rated.</i></p>
	<p>Operation phase</p> <p><i>Operational impacts have not been rated.</i></p>
	<p>Residual Impact Significance</p> <p>The residual impact is considered to be <i>moderate</i> for the KBA Kaz Mountains and <i>minor</i> to flora species, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • Minimize traffic. • Source goods/materials locally where possible. • Report the presence of any IAS present. • Where IAS are recorded it to perform a 'as-new' wash-down before entering non-infested areas of the site and after working in infested areas. • Train and raise awareness of personnel regarding IAS. Invasive Species Management Plan should be developed to minimize construction and operation impacts.

15.2 ARMUTCUK WIND POWER PLANT

Summary for Wind Farm Armutcuk	
Name	Armutcuk Wind Power Plant (WPP) Project
Description	20 turbines and 84 MWm total installed power, a switchyard, Project roads (i.e., access and site roads), a 68.75 tons/hour capacity mobile crushing and screening facility, to be used as necessary, as well as an overhead transmission line (OHL).
Location	In Çanakkale Province, Yenice District, Armutcuk Neighborhood and Balıkesir province, and Büyükşapçı Neighborhood.
Status	Not yet operational
Available Baseline Information for Biodiversity	
1 Protected Areas (just KBA status)	<p>The Project area overlaps with the Kaz Dağları ('Kaz Mountains') MAR008 which is a designated Key Biodiversity Area (KBA) and International Bird and Biodiversity Area (IBA):</p> <ul style="list-style-type: none"> • Kaz Dağları (Kaz Mountains) – spanning 150,200 hectares, encompass various vegetation types including maquis, shrubland, and forests. The southern slopes feature red pine forests, while higher elevations are dominated by black pine forests. Additionally, the area hosts rich maquis communities and olive groves. Notable species include the Kazdag Fir and oriental beech, along with diverse bird and mammal species. • Of particular importance are predatory birds like Krüper's Nuthatch, Golden Eagle, and Peregrine Falcon. Mammals include globally significant species like Mehely's horseshoe bat and Mediterranean

Summary for Wind Farm Armutçuk		
		horseshoe bat. The area also supports <i>Capoeta bergamae</i> , a near-threatened freshwater fish species.
2 Habitat	2.1 Natural habitat	<p>Most of the project area is being located in Woodland (<i>Pinus nigra</i>) being present 85.96 % in the project AoI, with flowing and intermittent (temporary) streams.</p> <p>The following EUNIS habitat types are present in the AoI: G3.5 <i>Pinus nigra</i> woodland; G4.B Mixed mediterranean pine – thermophilus oak woodland; G5.5 Small mixed broadleaved and coniferous anthropogenic woodlands; I1.3 Arable land with unmixed crops grown by low-intensity agricultural methods.</p>
	2.2 Critical habitat	<p>A Critical Habitat Assessment (CHA) has been conducted based on the EBRD PR6 guidelines and available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies.</p> <p><i>Not relevant - critical habitat not triggered at the site.</i></p> <p>Bird species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> • Imperial Eagle (<i>Aquila heliaca</i>, nationally VU) • White Stork (<i>Ciconia ciconia</i>, nationally VU) • Short-toed Snake-eagle (<i>Circaetus gallicus</i>, nationally VU) • Greated Spotted Eagle (<i>Clanga clanga</i>, nationally VU) • Lesser Spotted Eagle (<i>Clanga pomarina</i>, nationally EN) • Red-footed Falcon (<i>Falco vespertinus</i>, nationally VU) • Griffon Vulture (<i>Gyps fulvus</i>, nationally EN) • European Honey-buzzard, (<i>Pernis apivorus</i>, nationally NT) • European Turtle-dove (<i>Streptopelia turtur</i>, nationally VU) <p>Flora species observed during field surveys are all considered as PBF:</p> <ul style="list-style-type: none"> • <i>Digitalis trojana</i>, VU • <i>Cirsium balikesirense</i>, VU • <i>Cyclamen hederifolium</i>, VU <p>Bat species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> • Schreiber’s Bent-winged Bat, VU IUCN (<i>Miniopterus schreibersii</i>, nationally VU) <p>Terrestrial species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> • Common Tortoise (<i>Testudo graeca</i>, nationally VU) • European Roe Deer (<i>Capreolus capreolus</i> (of national importance) <p>Based on EUNIS level 3 habitat classification, two habitat types were determined based on desk study and field observation, the habitat type G3.5 <i>Pinus nigra</i> is considered as PBFs:</p> <ul style="list-style-type: none"> • G3.5 <i>Pinus nigra</i> woodland - LC (not defined as Critical habitat) • G4.B Mixed Mediterranean pine – thermophilus oak woodland, (not evaluated by IUCN)
	2.3 Ecosystem services	During field surveys, ecosystem services such as farming, beekeeping, forestry, and animal grazing were observed in the Project Area and its close vicinity.
3 Species	3.1 Flora	<p>National flora surveys were performed between 15-23 October 2021, with two regional endemic species which are found in woodland habitats and open spaces where <i>Pinus</i> species are dominant:</p> <ul style="list-style-type: none"> • <i>Digitalis trojana</i> (VU nationally) • <i>Cirsium balikesirense</i> (VU nationally)

Summary for Wind Farm Armutcuk	
	<p>One widespread endemic species mainly found on rocky places:</p> <ul style="list-style-type: none"> • <i>Campanula lyrata subps. lyrata</i> (LC IUCN) <p>Non-endemic but rare species found in shades of deciduous woodland:</p> <ul style="list-style-type: none"> • <i>Cyclamen hederifolium</i> (VU IUCN)
3.2 Birds	<p>The position of the planned Armutcuk WPP is located on the Dardanelles and Aegean migratory route for migratory large soaring birds. As part of the National EIA monitoring studies were performed between the August 18th – 17th of October 2021 as well as 24th of March and 7th of April 2022, 15 times each.</p> <p>The species identified on site and considered to be of high sensitivity include several raptors and storks are:</p> <p>Imperial Eagle (<i>Aquila heliaca</i>), White Stork (<i>Ciconia ciconia</i>), Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Lesser Spotted Eagle (<i>Clanga pomarina</i>), Greater Spotted Eagle (<i>Clanga clanga</i>), Red-footed Falcon (<i>Falco vespertinus</i>), Griffon Vulture (<i>Gyps fulvus</i>), and European Honey-buzzard (<i>Pernis apivorus</i>), except for the Eleonora's Falco (<i>Falco eleonora</i>) which has been found in literature.</p> <p>Moreover, it is anticipated that dispersal activity of juvenile Imperial Eagles (<i>Aquila heliaca</i>) from Thracian populations, as well as Griffon Vultures (<i>Gyps fulvus</i>) from Balkan populations, may occur.</p> <p>VP (Vantage Point) surveys have been conducted as part of the national EIA. Additional VP surveys are planned for 2024.</p>
3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in August, September, and October 2021 for a total of 6 day/nights.</p> <p>The following threatened species, were observed on site:</p> <ul style="list-style-type: none"> • <i>Miniopterus schreibersii</i> (VU globally), • Long-distance migrants (e.g. <i>Pipistrellus nathusii</i>) • And species with high collision risk (e.g. <i>Pipistrellus</i> and <i>Nyctalus</i> sp) <p>No KBA trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review. All other species observed during the monitoring studies are classified as LC globally according to the IUCN Database.</p>
3.4 Other faunal species	<p>During the national EIA seven amphibian species, 24 reptile species and 29 non-volant species have been observed as relevant as part of the desktop studies conducted.</p> <p>Most of these species are common and widespread. None of the species is considered to be endemic.</p> <p>The Common tortoise (<i>Testudo graeca</i>) VU was observed during the monitoring surveys conducted as part of the national EIA, beside the Roe deer (<i>Capreolus capreolus</i>) LC IUCN which is considered to be of national importance being under threat of hunting in the Canakkale province.</p> <p>The habitats within the Project area, identified by the local expert, match those of certain species classified as Vulnerable (VU), although these species themselves were not observed at the site:</p> <p>Mouse-tailed dormouse (<i>Myomimus roachi</i>) VU, Marbled polecat (<i>Vormela peregusna</i>) VU, and the Brown bear (<i>Ursus arctos</i>) LC but of national importance.</p> <p>Since the Project area is known to have some freshwater streams, no surveys were carried out for freshwater fish species as part of the National EIA. The data is based on desktop studies.</p>

Summary for Wind Farm Armutcuk	
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA	
Protected Areas	<p><u>Construction phase</u></p> <p>The Project area is situated between the Kaz Mountains KBA. The Critical habitat qualifying species are likely to be present within the 2 km AoI. Construction activities will impact the KBA in form of habitat loss and degradation (vegetation clearing, air pollution, invasive species, access roads, soil pollution, accidental spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance). The magnitude of the construction impacts is considered to be <i>moderate</i>, with the impact significance being <i>major</i>.</p> <p><u>Operation phase</u></p> <p>Operational impacts are considered to be low for flora species. The impacts for bird and bat species associated with the KBA are likely to be impacted by operation activities due to injury and mortality risks associated with the movement of turbine blades, and overhead lines of the Project. Risk of impact is likely to be elevated for large soaring birds and raptors such as European Honey-buzzard. The magnitude of the impacts is considered to be <i>minor</i>, with the impact significance being <i>major</i>.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites. • Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.
Natural habitat	<p><u>Construction phase</u></p> <p>Construction activities will pose an impact to the natural habitats in form of habitat loss and degradation including mainly the forest habitats because of vegetation clearing and rock blasting for installation of the Project components such as roads, turbine pads, OHL route) including fragmentation and edge effects and are limited to the footprint.</p> <p>G3.5 <i>Pinus nigra</i> woodland: 3.11 ha will be lost due to access roads which makes 99.7%, 0.14 ha due to site roads which makes 0.5%, 19.06 ha will be lost due to turbine footprint which makes 63.0%, and 0.01 ha will be lost due to the switchyard area which makes 0.4%.</p> <p>G4.B Mixed mediterranean pine: thermophilus oak woodland 0.08 ha will be lost due to turbine footprint which makes 0.3%, and 0.10 ha which makes 6.5 % will be lost due to the switchyard area.</p> <p>G5.5 Small mixed broadleaved and coniferous anthropogenic woodlands: 0.01 ha will be lost due to access roads which makes 0.3%, 2.35 ha will be lost due to turbine footprint which makes 7.8%, and 1.43 ha will be lost due to the switchyard area which makes 93.1%.</p> <p>E4.4 Calcareous alpine and subalpine grassland: 23.06 ha will be lost due to site roads which makes 84.5 %.</p> <p>H2.6 Calcareous and ultra-basic screes of warm exposures: 2.81 ha will be lost due to site roads which makes 10.3% of the total area to be lost.</p> <p>H3.2 Basic and ultra-basic inland cliffs: 0.26 ha will be lost due to site roads which makes 1.0%.</p> <p>The significance of the construction impacts is considered to be <i>moderate</i>.</p>

Summary for Wind Farm Armutcuk	
	<p><u>Operation phase</u></p> <p>The operation of the wind farm is expected to have a habitat fragmentation effect mostly in the areas covered by forests. The significance of the construction impacts is considered to be <i>moderate</i>.</p>
	<p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss. • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal. • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites. • Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.
Critical habitat	<i>Not relevant – critical habitat not triggered.</i>
Flora	<p><u>Construction phase</u></p> <p>Three nationally Vulnerable (VU) species were identified during the field surveys conducted for the national EIA in the Project footprint. The three species are considered as critical habitat qualifying species present on site and will be affected by the project activities. The impacts considered are the introduction of IAS (Invasive Alien Species), temporary and permanent loss of areas of terrestrial habitats, and the loss of flora species which are present at site. The effects are considered to be felt in the direct footprint of the planned project. The impact significance is considered to be <i>moderate</i>.</p>
	<p><u>Operation phase</u></p> <p>Three IUCN VU species were identified by National EIA within Project footprint. Due to limited habitat loss, a high rate of decline in populations is not expected. It is estimated that the operational impacts will be <i>negligible</i>.</p>
	<p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species. The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, • Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.

Summary for Wind Farm Armutcuk

Birds

Construction phase

The impacts related to birds are considered to be only temporary during construction, in terms of edge effects, habitat loss and degradation the forest patches inside the footprint area are going to be cleared for construction. Since the forest is not considered 'mature' therefore presents limited breeding opportunities for birds. Temporary disturbance during construction is considered to be in terms of blasting, air pollution, noise.

The forest clearing is expected to have *minor* impact on some highly sensitive species since the forest is young and is not considered to present breeding sites for those critical habitat qualifying species.

The impact significance during construction is considered to be *minor to moderate*.

Operation phase

One of the primary factors impacting biodiversity during the operational phase involves the risks of bird species facing collision, electrocution, injuries, or mortality. While collision with moving turbine blades poses the greatest risk of mortality, other structures such as turbine towers, pylons, fences, and those associated with the switchyard can also cause injury or death.

Bird species are susceptible to collision risks, whereas electrocution primarily affects bird species.

As the planned WPP is located along a path commonly used by migrating and large soaring birds, namely the Dardenelles migratory route, there are concerns about how the plant's operation might affect these highly sensitive species.

The mortality and injury rates are considered to be high at the Armutcuk WPP during operation due to the artificial lights which may attract and disorient the species during their nocturnal migrations.

Other potentially occurring impacts are displacement, avoidance and barrier effects for migrants, collision, and electrocution.

Barrier effects should as well be considered as cumulative impacts considering the high development rate nearby.

The significance of impact during operation is considered to be *major* for highly sensitive species and *moderate* for soaring migrants.

Residual Impact Significance

The residual impact is considered to be *moderate* for bird collision and electrocution mortality, and *minor* in regard to highly sensitive birds and their habitat loss after implementing and considering the following generic mitigation measures:

A good pre-operational and operational monitoring program is needed in order to assess the full scope of risks and manage them including:

- Artificial lighting will be managed carefully to avoid attracting and dazing migrants.
- The OHL will be marked throughout to increase visibility.
- A Shut-down on demand or equivalent turbine management program will be implemented and maintained unless operation monitoring results strongly suggest negligible/low impact.
- The Project components will be managed to not offer perching and nesting opportunities.
- Safe perching, roosting and nesting opportunities will be provided.
- A turbine curtailment approach for minimizing bird mortality will be developed.
- Trainings will be provided to raise awareness of all site personnel.

Summary for Wind Farm Armutcuk	
Bats	<p><u>Construction phase</u></p> <p>The impacts to bats are considered to be temporary, although the bat species present at site are globally LC species, the impact significance is considered to be <i>negligible</i>.</p> <p>Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route. Direct loss of nests and shelters is considered to be limited to the footprint.</p> <p><u>Operation phase</u></p> <p>One of the primary factors impacting biodiversity during the operational phase involves the risks of bat species facing collision, electrocution, barotrauma injuries and mortality. While collision with moving turbine blades poses the greatest risk of mortality, other structures such as turbine towers, pylons, fences, and those associated with the switchyard can also cause injury or death.</p> <p>The significance of the operation impacts is considered to be: <i>major</i> when it comes to collision / barotrauma mortalities, <i>moderate</i> in regard to artificial light and <i>negligible</i> in terms of habitat loss.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>major</i>, after implementing and considering the following generic mitigation measures:</p> <p>A good pre-operational and operational monitoring program is needed to assess the full scope of risks and manage them including:</p> <ul style="list-style-type: none"> • Artificial lighting will be managed carefully to avoid attracting and dazing migrants. • The OHL will be marked throughout to increase visibility. • A Shut-down on demand or equivalent turbine management program will be implemented and maintained unless operation monitoring results strongly suggest negligible/low impact. • The Project components will be managed to not offer perching and nesting opportunities. • Safe perching, roosting and nesting opportunities will be provided. • A turbine curtailment approach for minimizing bat mortality will be developed. • Trainings will be provided to raise awareness of all site personnel.
Other faunal species	<p><u>Construction phase</u></p> <p>Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through habitat loss or degradation, disturbances caused by human presence, artificial lighting, dust, and noise. Additionally, there's a risk of injury or mortality to these species during construction and due to increased traffic, as well as temporary habitat fragmentation.</p> <p>The species identified, are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU).</p> <p>The impacts considered during construction phase are habitat loss as a result of vegetation clearing, temporary disturbance due to construction activities like noise, air pollution and injuries caused by car accidents and loss of nests and breeding sites for small faunal groups.</p> <p>The impact significance is considered to be <i>minor</i>.</p> <p><u>Operation phase</u></p> <p>The disturbance during operation will include vehicular traffic, light and noise, air pollution, and the possibility for deaths caused by traffic.</p> <p>The impact significance is considered to be <i>minor</i>.</p>

Summary for Wind Farm Armutcuk	
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>negligible</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss. • On-site vehicle speed limits should be implemented to avoid potential road-kills. • Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period. • Installing artificial structures within the AoI for nesting, roosting or hibernating fauna such as shelter for terrestrial fauna. • Siting decisions should be made to minimize the injury and mortality risks (consider proximity to roads, OHL and turbines). • Site employees should be trained to be aware of significance of habitats and species, nests of fauna species, to avoid any destruction or displacement.
Introduction of IAS	<p><u>Construction phase</u></p> <p><i>Construction impacts have not been rated.</i></p>
	<p><u>Operation phase</u></p> <p><i>Operational impacts have not been rated.</i></p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate</i> for the KBA Kaz Mountains and <i>minor</i> to flora species, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • Minimize traffic. • Source goods/materials locally where possible. • Report the presence of any IAS present. • Where IAS are recorded it to perform a 'as-new' wash-down before entering non-infested areas of the site and after working in infested areas. • Train and raise awareness of personnel regarding IAS. Invasive Species Management Plan should be developed to minimize construction and operation impacts.

15.3 KESTANEDERESI WIND POWER PLANT

Summary for Wind Farm Kestanderesi	
Name	Kestanderesi Wind Power Plant (WPP) Project
Description	28 turbines and 116 MWm/117MWm total installed power, a switchyard, Project roads (i.e., access and site roads), a 300 tons/hour capacity mobile crushing and screening facility, to be used as necessary, as well as an overhead transmission line (OHL).
Location	Between Aydin Province, Nazilli and Kuyucak Districts; Manisa Province, Alaşehir District; and İzmir Province, Kiraz District.
Status	Not yet operational
Available Baseline Information for Biodiversity	
1 Protected Areas (just KBA status)	<p>The Project area overlaps with the Boz Dağları ('Biga Mountains') (EGE024) which is a designated Key Biodiversity Area (KBA) and International Bird and Biodiversity Area (IBA):</p> <ul style="list-style-type: none"> • Boz Mountains, the largest mountain range in the Aegean region, boasts unique Mediterranean plant communities and vital water sources from streams like Kelebek and Keleş. Habitats: Maquis areas, red pine forests, and high mountain meadows dominate, with natural chestnut communities and a small lake adding to the biodiversity. • Species: Boz Mountains are home to numerous endemic plant species and globally limited species like <i>Anthemis xylopoda</i>. The area hosts important predatory and forest bird species like the Long-legged buzzard and Short-toed Snake eagle, along with rare mammals like the roe deer and small burrowing vole. The Caucasian salamander thrives as a significant amphibian species.

Summary for Wind Farm Kestanderesi		
		The closest internationally protected area is situated approximately 40 km from the AoI.
2 Habitat	2.1 Natural habitat	<p>Most of the project area is being located (47%) on agricultural fields, approximately 96 ha, and 3 ha of industrial areas, the remaining 53% are natural habitats consisting of woodland and forests, approximately 89 ha of <i>Pinus nigra</i> and Mixed mediterranean pine, 134 ha of steppe (grassland) habitats and 26 ha of rocky areas.</p> <p>The following EUNIS habitat types are present in the AoI: G3.5 <i>Pinus nigra</i> woodland; G4.B Mixed mediterranean pine – thermophilus oak woodland; E4.4 Alpine and subalpine grasslands; H2.6 Western Mediterranean and thermophilus scree, and H3.2 Boreal arctic base rich inland cliff.</p>
	2.2 Critical habitat	<p>A Critical Habitat Assessment (CHA) has been conducted based on the EBRD PR6 guidelines and available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies.</p> <p>CHA for birds for criteria 1-3 was based on existing studies which were performed for other nearby wind farms and their bird surveys.</p> <p>Flora species identified during field surveys are classified as "Least Concern" (LC) and are not deemed triggering species.</p> <p><i>Critical habitat has not been triggered at the site.</i></p> <p>Bird species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Golden Eagle (<i>Aquila chrysaetos</i>, nationally not evaluated) • Egyptian Vulture (<i>Neophron percnopterus</i>, nationally VU) • Saker Falcon (<i>Falco cherrug</i>, nationally CR) <p>Bat species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Schreiber's Bent-winged Bat (<i>Miniopterus schreibersii</i>) • Giant Noctule (<i>Nyctalus lasiopterus</i>) • Noctule (<i>Nyctalus noctule</i>) • Savi's Pipistrelle (<i>Hypsugo savii</i>) • Common Pipistrelle (<i>Pipistrellus pipistrellus</i>) <p>Terrestrial species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Common Tortoise (<i>Testudo graeca</i>, nationally VU) • <p>Based on EUNIS level 3 habitat classification, two habitat types were determined based on desk study and field observation. One of these habitat types (<i>Pinus nigra</i> woodland is considered as a priority habitat type.</p> <ul style="list-style-type: none"> • G3.5 <i>Pinus nigra</i> woodland (not defined as Critical habitat) LC • G4.B Mixed Mediterranean pine – thermophilus oak woodland, (not evaluated by IUCN) <p>No KBA triggering species have been observed during the field visits conducted for the National EIA.</p>
	2.3 Ecosystem services	During field surveys, ecosystem services such as farming, beekeeping, forestry, and animal grazing were observed in the Project Area and its close vicinity.
3 Species	3.1 Flora	<p>National flora surveys were performed in May 2022, with upcoming surveys planned in 2024. According to the National EIA there are no flora species which are triggering the Critical Habitat.</p> <p>Two endemic species were observed in forest habitats of black pine trees:</p>

Summary for Wind Farm Kestanderesi	
	<ul style="list-style-type: none"> • <i>Muscari ausceri (Boiss) Baker</i> (nationally LC) • <i>Marrubium globosum Montbret & Aucher ex. Benth</i> (nationally LC)
3.2 Birds	<p>The position of the planned Kestanderesi WPP is located close to a minor migratory route for large soaring birds. As part of the National EIA, monitoring studies were performed in Autumn 2021 and Spring 2022 during migratory seasons.</p> <p>The species identified during the surveys are predominantly categorized as "Least Concern" on the IUCN Red List, with several species being classified as "Vulnerable" (VU) according to the national protection status.</p> <p>The breeding bird survey took place from March 15th to April 30th, 2022, and from May 1st to June 15th, 2022.</p> <p>The species identified on site and considered to be of high sensitivity are: Golden Eagle (<i>Aquila chrysaetos</i>), White Stork (<i>Ciconia ciconia</i>), Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Saker Falcon (<i>Falco cherrug</i>), and European Honey-buzzard (<i>Pernis apivorus</i>).</p>
3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in August, and September for a total of 8 days/nights.</p> <p>The following threatened species were observed on site:</p> <ul style="list-style-type: none"> • <i>Miniopterus schreibersii</i> (VU globally) and <i>Nyctalus lasiopterus</i> (VU globally), • Long-distance migrants (e.g. <i>Pipistrellus nathusii</i>) • And species with high collision risk (e.g. <i>Pipistrellus</i> and <i>Nyctalus</i> sp) <p>No KBA trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review. All other species observed during the monitoring studies are classified as LC globally, according to the IUCN Database.</p>
3.4 Other faunal species	<p>During the national EIA four amphibian species, 11 reptile species and 23 non-volant species have been observed as part of the desktop studies conducted. Most of these species are common and widespread. None of the species is considered to be endemic.</p> <p>The only species classified as Vulnerable (VU) was the Common tortoise (<i>Testudo graeca</i>) which has been observed during the monitoring surveys conducted as part of the national EIA.</p> <p>According to the desktop data the habitats within the Project area, match those of certain species which are triggering the CH like the Apollo butterfly (LC), although these species were not observed at the site.</p>
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA	
Protected Areas	<p><u>Construction phase</u></p> <p>The Project area is situated within the Boz Mountains KBA. The Critical habitat qualifying species are likely to be present within the 2 km AoI. Construction activities will impact the KBA in form of habitat loss, fragmentation, and degradation (vegetation clearing, air pollution, invasive species, access roads, soil pollution, accidental spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance, edge effects).</p> <p>The magnitude of the construction impacts is considered to be <i>moderate</i>, with the impact significance being <i>major</i>.</p>
	<p><u>Operation phase</u></p> <p>Operational impacts are considered to be low for flora species. The impacts for bird and bat species associated with the KBA are likely to be impacted by operation activities due to injury and mortality risks associated with the movement of turbine blades, and overhead lines of the Project.</p>

Summary for Wind Farm Kestanderesi	
	<p>The impact significance is considered to be <i>minor</i>, with the impact significance being <i>major</i>.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> All construction and operational working areas should be kept to a minimum to reduce habitat loss, All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, <p>Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.</p>
Natural habitat	<p><u>Construction phase</u></p> <p>Construction activities will pose an impact to the natural habitats in form of habitat loss and degradation including mainly the forest habitats because of vegetation clearing and rock blasting for installation of the Project components such as roads, turbine pads, OHL route) including fragmentation and edge effects and are limited to the footprint.</p> <p>E4.4 Calcareous alpine and subalpine grassland: 1.62 ha will be lost due to access roads which makes 27.7%, 23.06 ha due to site roads which makes 84.5%, 33.31 ha will be lost due to turbine footprint which makes 78.5%, 1.45 ha will be lost due to the switchyard area which makes 100%, and 75.4 ha due to Electrical Transmission Line which makes 27.9%.</p> <p>G3.5 Pinus nigra woodland: 0.14 ha will be lost due to site roads which makes 0.5%, 37.1 ha due to OHL which makes 13.7%.</p> <p>H2.6 Calcareous and ultra-basic screes of warm exposures: 2.81 ha will be lost due to site roads which makes 10.3% of the total area to be lost, 14.6 ha due to OHL which makes 5.4%.</p> <p>H3.2 Basic and ultra-basic inland cliffs: 0.26 ha will be lost due to site roads which makes 1.0%, and 1.60 ha due to turbine footprint which makes 3.8%.</p> <p>The significance of the construction impacts s considered to be <i>minor</i>.</p> <p><u>Operation phase</u></p> <p>The operation of the wind farm is expected to have a habitat fragmentation effect mostly in the areas covered by forests and in alpine, subalpine, and boreal grassland due to turbine settlements.</p> <p>The significance of the construction impacts s considered to be <i>moderate</i>.</p> <p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities are not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p> <p>The residual impact is considered to be <i>negligible</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> All construction and operational working areas should be kept to a minimum to reduce habitat loss, All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, Boundaries of the construction areas, including traffic routes, should be limited only to designated sites,

Summary for Wind Farm Kestanderesi	
	Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.
Critical habitat	<i>Not relevant – critical habitat not triggered.</i>
Flora	<p><u>Construction phase</u> No Vulnerable (VU) or Endangered (EN) species were identified during field surveys conducted for the national EIA in the Project footprint. Eight species found in literature review are considered to trigger the Critical Habitat assessment criteria. The impacts considered are the introduction of IAS (Invasive Alien Species), temporary and permanent loss of areas of terrestrial habitats, and the loss of flora species which are present at site. The effects are considered to be felt in the direct footprint of the planned project. The significance of this impact is considered to be <i>minor</i>.</p> <p><u>Operation phase</u> According to the national EIA, eight Vulnerable (VU) species were identified that may potentially inhabit the Project footprint. These species are anticipated to inhabit alpine, subalpine, and boreal grasslands, where there will be partial habitat loss. However, a significant decline in populations is not expected. It is estimated that the operational impacts will be <i>minor</i>.</p> <p><u>Residual Impact Significance</u> The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species. The residual impact is considered to be <i>negligible</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.
Birds	<p><u>Construction phase</u> The National EIA study did not indicate any noteworthy breeding / resident activities of high sensitivity species. The impacts related to birds are considered to be only temporary during construction, in terms of edge effects, habitat loss and degradation the forest patches inside the footprint area are going to be cleared for construction. Since the forest is not considered 'mature' therefore presents limited breeding opportunities for birds. Temporary disturbance during construction is considered to be in terms of blasting, air pollution, noise. The impact significance during construction is considered to be <i>minor</i>.</p> <p><u>Operation phase</u> One of the primary factors impacting biodiversity during the operational phase involves the risks of bird species facing collision, electrocution, injuries, or mortality. While collision with moving turbine blades poses the greatest risk of mortality, other structures such as turbine towers, pylons, fences, and those associated with the switchyard can also cause injury or death.</p>

Summary for Wind Farm Kestanderesi	
	<p>Bird species are susceptible to collision risks, whereas electrocution primarily affects bird species.</p> <p>As the planned WPP is not located along a path commonly used by migrating and large soaring birds, there are no concerns about how the plant's operation might affect these highly sensitive species.</p> <p>Other potentially occurring impacts are displacement, avoidance and barrier effects for migrants, collision, and electrocution.</p> <p>Barrier effects should as well be considered as cumulative impacts considering the high development rate nearby.</p> <p>The significance of impact during operation is considered to be <i>major</i> for highly sensitive species and <i>moderate</i> for soaring migrants when it comes to collision mortalities and <i>minor</i> in regards to habitat loss and degradation.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate</i> for bird collision and electrocution mortality, and <i>minor</i> in regard to highly sensitive birds and their habitat loss after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • A good pre-operational and operational monitoring program is needed in order to assess the full scope of risks and manage them including: • Artificial lighting will be managed carefully to avoid attracting and dazing migrants, • The OHL will be marked throughout to increase visibility, • A Shut-down on demand or equivalent turbine management program will be implemented and maintained unless operation monitoring results strongly suggest negligible/low impact, • The Project components will be managed to not offer perching and nesting opportunities, • Safe perching, roosting and nesting opportunities will be provided, • A turbine curtailment approach for minimizing bird mortality will be developed, • Trainings will be provided to raise awareness of all site personnel.
Bats	<p><u>Construction phase</u></p> <p>The impacts to bats are considered to be temporary, although the bat species present at site are globally LC species, the impact significance is considered to be <i>negligible</i>.</p> <p>Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route.</p> <p>Direct loss of nests and shelters is considered to be limited to the footprint.</p> <p><u>Operation phase</u></p> <p>One of the primary factors impacting biodiversity during the operational phase involves the risks of bat species facing collision, electrocution, barotrauma injuries and mortality. While collision with moving turbine blades poses the greatest risk of mortality, other structures such as turbine towers, pylons, fences, and those associated with the switchyard can also cause injury or death.</p> <p>The significance of the operation impacts is considered to be <i>major</i> when it comes to collision, barotrauma mortalities, <i>moderate</i> in regard to artificial light and <i>negligible</i> in terms of habitat loss.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>major</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • A good pre-operational and operational monitoring program is needed to assess the full scope of risks and manage them including: • Artificial lighting will be managed carefully to avoid attracting and dazing migrants, • The OHL will be marked throughout to increase visibility, • A Shut-down on demand or equivalent turbine management program will be implemented and maintained unless operation monitoring results strongly suggest negligible/low impact,

Summary for Wind Farm Kestanderesi	
	<ul style="list-style-type: none"> • Safe perching, roosting and nesting opportunities will be provided, • A turbine curtailment approach for minimizing bat mortality will be developed, • Trainings will be provided to raise awareness of all site personnel.
Other faunal species	<p><u>Construction phase</u> Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through habitat loss or degradation, disturbances caused by human presence, artificial lighting, dust, and noise. Additionally, there's a risk of injury or mortality to these species during construction and due to increased traffic, as well as temporary habitat fragmentation.</p> <p>The species identified, most are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU).</p> <p>The impacts considered during construction phase are habitat loss as a result of vegetation clearing, temporary disturbance due to construction activities like noise, air pollution and injuries caused by car accidents and loss of nests and breeding sites for small faunal groups.</p> <p>The impact significance is considered to be <i>minor</i>.</p> <p><u>Operation phase</u> The disturbance during operation will include vehicular traffic, light and noise, air pollution, and the possibility for deaths caused by traffic.</p> <p>The impact significance is considered to be <i>negligible</i>.</p> <p><u>Residual Impact Significance</u> The residual impact is considered to be <i>negligible, and minor for Testudo graeca</i> after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss. • On-site vehicle speed limits should be implemented to avoid potential road-kills. • Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period. • Installing artificial structures within the AoI for nesting, roosting or hibernating fauna such as shelter for terrestrial fauna. • Siting decisions should be made to minimize the injury and mortality risks (consider proximity to roads, OHL and turbines). • Site employees should be trained to be aware of significance of habitats and species, nests of fauna species, to avoid any destruction or displacement.
Introduction of IAS	<p><u>Construction phase</u> <i>Construction impacts have not been rated.</i></p> <p><u>Operation phase</u> <i>Operational impacts have not been rated.</i></p> <p><u>Residual Impact Significance</u> The residual impact is considered to be <i>moderate</i> for the KBA Kaz Mountains and <i>minor</i> to flora species, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • Minimize traffic. • Source goods/materials locally where possible. • Report the presence of any IAS present. • Where IAS are recorded it to perform a 'as-new' wash-down before entering non-infested areas of the site and after working in infested areas. • Train and raise awareness of personnel regarding IAS.

Summary for Wind Farm Kestanderesi

- Invasive Species Management Plan should be developed to minimize construction and operation impacts.

15.4 OVACIK WIND POWER PLANT

Summary for Wind Farm Ovacik

Name	Ovacik Wind Power Plant (WPP) Project	
Description	13 turbines and 54.6 MWm/54.6 MWe total installed power, a switchyard, Project roads (i.e., access and site roads), a 68.75 tons/hour capacity mobile crushing and screening facility (to be used as needed), as well as an overhead transmission line (OHL).	
Location	Çanakkale Province, Bayramiç District, Gökçeçi, Kuşçayır and Karıncalık Neighborhoods.	
Status	Not yet operational	
Available Baseline Information for Biodiversity		
1 Protected Areas (just KBA status)	<p>The Project itself is not located within a legally protected or internationally recognized area, however the Project AoI (Area of Influence) overlaps partially with the Kaz Dağları ('Kaz Mountains') (MAR008), the Biga Dağları ('Biga Mountains') (MAR009) and the Çanakkale Strait (MAR004) which are designated as Key Biodiversity Areas (KBA) and International Bird and Biodiversity Areas (IBA):</p> <ul style="list-style-type: none"> • Biga Dağları (Biga Mountains) - with peaks reaching 934 meters, form a small mountain range extending north-south. The area's rugged terrain is shaped by numerous streams flowing from the mountains towards the southern shores. Habitats include forests, shrub-covered pastures, maquis communities, and agricultural areas. Turkish pine dominates the lowlands, while hairy oaks are prevalent at higher elevations. Plant species like Troy snowdrop, <i>Crocus candidus</i>, and <i>Paeonia mascula ssp. bodurii</i> are present, meeting the KBA criteria. The Syrian woodpecker and woodlark breed in the area, fulfilling KBA criteria at a regional scale. • Kaz Dağları (Kaz Mountains) – spanning 150,200 hectares, encompass various vegetation types including maquis, shrubland, and forests. The southern slopes feature red pine forests, while higher elevations are dominated by black pine forests. Additionally, the area hosts rich maquis communities and olive groves. Notable species include the Kazdag Fir and oriental beech, along with diverse bird and mammal species. Of particular importance are predatory birds like Krüper's Nuthatch, Golden Eagle, and Peregrine Falcon. Mammals include globally significant species like Mehely's horseshoe bat and Mediterranean horseshoe bat. The area also supports Capoeta bergamae, a near-threatened freshwater fish species. • Cannakkale Strait KBA was designated a KBA and IBA for the conservation of the coastal bird, Yelkouan Shearwater (<i>Puffinus yelkouan</i>, globally VU), which is a passage migrant. 	
2 Habitat	2.1 Natural habitat <i>What types of natural habitats are in the Project AoI – list with status and extent</i>	<p>Most of the Project area is being located in Woodland (mainly the Red Pine <i>Pinus brutia</i> habitat types and pseudo-maquis); while <i>Pinus brutia</i> forests form the upper layer, <i>Quercus infectoria</i>, <i>Erica arborea</i>, <i>Juniperus oxycedrus</i>, <i>Cistus creticus</i>, <i>Cistus salviifolius</i> species are distributed in the shrub layer. While the proposed OHL extends towards northwest for about 7,4 km through the forest which is mainly the thermophilus deciduous forest. The dominant tree species of this habitat are <i>Quercus frainetto</i>, <i>Quercus cerris</i>, <i>Quercus infectoria subsp. infectoria</i>.</p> <p>The following EUNIS habitat types are present in the AoI: G1.7 Thermophilus deciduous woodland; G3.7 <i>Pinus brutia</i> woodland; G3.F Highly artificial coniferous plantations; F5.3 Pseudomaquis.</p>
	2.2 Critical habitat <i>Are there critical habitats,</i>	<p>A Critical Habitat Assessment (CHA) has been conducted based on the EBRD PR6 guidelines available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies.</p>

Summary for Wind Farm Ovacik	
<p><i>what biodiversity values qualify for CH, where are these located in relation to the project</i></p>	<p>CHA for birds for criteria 1-3 was based on existing studies which were performed for other nearby Wind Farms and their bird surveys.</p> <p>Two bird species observed during field surveys <i>potentially</i> trigger CH, namely the Short-toed Snake Eagle (<i>Circaetus gallicus</i>, nationally VU) and the Lesser Spotted Eagle (<i>Clanga pomarina</i>, nationally EN).</p> <p>Flora species observed during field surveys:</p> <ul style="list-style-type: none"> • <i>Crocus candidus</i>, VU <p>Bird Species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Lesser Spotted Eagle (<i>Clanga pomarina</i>, nationally EN) • Red-footed Falcon (<i>Falco vespertinus</i> nationally not evaluated) • Short-toed Snake Eagle (<i>Circaetus gallicus</i>, nationally VU) • European Turtle-dove (<i>Streptopelia turtur</i>, nationally VU) <p>Bat species observed during field surveys and considered as PBFs:</p> <ul style="list-style-type: none"> • Schreiber's Bent-winged Bat – VU IUCN (<i>Miniopterus schreibersii</i>) • Giant Noctule – VU IUCN (<i>Nyctalus lasiopterus</i>, nationally DD) • Savi's Pipistrelle – LC IUCN (<i>Hypsugo savii</i>, nationally LC) • Lesser Noctule – LC IUCN (<i>Nyctalus leisleri</i>, nationally LC) • Noctule – LC IUCN (<i>Nyctalus noctule</i>, nationally LC) • Nathusius' Pipistrelle – LC IUCN (<i>Pipistrellus nathusii</i>, nationally LC) • Common Pipistrelle – LC IUCN (<i>Pipistrellus pipistrellus</i>, nationally na) • Soprano Pipistrelle – LC IUCN (<i>Pipistrellus pygmaeus</i>, nationally LC) • Particolored Bat – LC IUCN (<i>Vespertilio murinus</i>, nationally LC) <p>Terrestrial species observed during field surveys:</p> <ul style="list-style-type: none"> • Common Tortoise (<i>Testudo graeca</i>, nationally VU) • Brown bear – VU IUCN Mediterranean (<i>Ursus arctos</i>) <p>Based on EUNIS level 3 habitat classification, six natural habitat types were determined based on desktop study and field observation. None of these habitats are listed in Annex I of the EU Habitats Directive.</p> <ul style="list-style-type: none"> • G3.7 Pinus brutia Woodland (Lowland to montane Mediterranean Pinus Woodland), LC • G1.3F Plantation (<i>P. brutia</i>), na • F5.3 Pseudo maquis, LC
2.3 Ecosystem services	<p>During field surveys, ecosystem services such as farming, beekeeping, forestry, and animal grazing were observed in the Project Area and its close vicinity.</p>
3 Species	<p>3.1 Flora</p> <p>National flora surveys were performed between 15-23 October 2021, including regional endemic species which are found in woodland habitats and open spaces where Pinus species are dominant.</p> <p>Regional endemic species found mainly on rocky open areas, woodland, and grassland habitats:</p> <ul style="list-style-type: none"> • <i>Crocus candidus</i>, (nationally VU) <p>Three widespread endemic species mainly found on rocky places and open grassland:</p> <ul style="list-style-type: none"> • <i>Centaurea olympica</i>, LC • <i>Campanula lyrata</i> subsp. <i>lyrata</i>, LC • <i>Stachys cretica</i> subsp. <i>smyrnea</i>, LC <p>Based on the surveys conducted for the National EIA there are three different types of tree species present, namely:</p> <ul style="list-style-type: none"> • Red pine (<i>Pinus brutia</i>), LC

Summary for Wind Farm Ovacik		
		<ul style="list-style-type: none"> Turkey oak (<i>Quercus cerris</i>), LC Hungarian oak (<i>Quercus frainetto</i>), LC <p>According to the calculations conducted a total of 14, 058 trees are expected to be cut.</p>
	3.2 Birds	<p>The position of the planned Ovacik WPP is located on the Dardanelles migratory route for migratory large soaring birds. The monitoring surveys were conducted between 18 August 2021 and 17 October 2021, as well as between 24 March 2021 and 7 April 2022.</p> <p>The species identified during the surveys which are considered to be of high sensitivity include several large soaring migratory birds (storks, pelicans, buzzards, falcons, harriers), large soaring resident species and other resident species of conservation importance: Eurasian Sparrowhawk (<i>Accipiter nisus</i>), Golden Eagle (<i>Aquila chrysaetos</i>), Imperial Eagle (<i>Aquila heliaca</i>), Grey Heron (<i>Ardea cinerea</i>), Purple Heron (<i>Ardea purpurea</i>), Common Buzzard (<i>Buteo buteo</i>), Long-legged Buzzard (<i>Buteo rufinus</i>), White Stork (<i>Ciconia ciconia</i>), Black Stork (<i>Ciconia nigra</i>), Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Eurasian Marsh-Harrier (<i>Circus aeruginosus</i>), Lesser Spotted Eagle (<i>Clanga pomarina</i>), Greater Spotted Eagle (<i>Clanga clanga</i>), Red-footed Falcon (<i>Falco vespertinus</i>), Peregrine Falcon (<i>Falco peregrinus</i>), Eurasian Hobby (<i>Falco subbuteo</i>), Eurasian Kestrel (<i>Falco tinnunculus</i>), Booted Eagle (<i>Hieraetus pennatus</i>), Black Kite (<i>Milvus migrans</i>), European Honey-buzzard (<i>Pernis apivorus</i>), Krüper's Nuthach (<i>Sitta krueperi</i>), European Turtle-dove (<i>Streptopelia turtur</i>).</p>
	3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in August, September, and October 2021 for a total of 6 day/nights.</p> <p>Threatened species such as <i>Miniopterus schreibersii</i> (VU globally) have been observed on site among the long-distance migrant (<i>Pipistrellus nathusii</i>) and species with high collision risk (<i>Pipistrellus sp.</i> and <i>Nyctalus sp.</i>) were recorded at the Project area and at nearby projects with similar habitat characteristics.</p> <p>No KBA trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review. All other species observed during the monitoring studies are classified as LC globally, according to the IUCN Database.</p>
	3.4 Other faunal species	<p>During the national EIA seven amphibian species, 24 reptile species and 29 non-volant species have been observed as relevant as part of the desktop studies conducted. Most of these species are common and widespread. None of the species is considered to be endemic.</p> <p>The Common tortoise (<i>Testudo graeca</i>) VU was observed during the monitoring surveys conducted as part of the national EIA, beside the Roe deer (<i>Capreolus capreolus</i>) LC IUCN which is considered to be of national importance being under threat of hunting in the Canakkale province.</p> <p>The habitats within the Project area, identified by the local expert, match those of certain species classified as Vulnerable (VU), although these species themselves were not observed at the site: Mouse-tailed dormouse (<i>Myomimus roachi</i>) VU, Marbled polecat (<i>Vormela peregusna</i>) VU, and the Brown bear (<i>Ursus arctos</i>) LC but of national importance.</p>
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA		
	Protected Areas	<p><u>Construction phase</u></p> <p>Construction activities will impact the KBA in form of habitat loss and degradation (vegetation clearing, air pollution, invasive species, access roads, soil pollution, accidental spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance).</p> <p>The impact significance of construction is considered to be <i>moderate</i>, with the impact significance being <i>major</i>.</p>

Summary for Wind Farm Ovacik	
	<p><u>Operation phase</u> Operational activities are not considered to impact or threaten the qualifying species <i>Crocus candidus</i> found on site. The impact significance is considered to be <i>minor</i>, with the impact significance being <i>major</i>.</p> <p><u>Residual Impact Significance</u> The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.
Natural habitat	<p><u>Construction phase</u> Construction activities will pose an impact to the natural habitats in form of habitat loss and degradation. G1.7 Thermophilus deciduous woodland: 0.09 ha will be lost due to site roads which makes 0.6% and 1.52 ha due to turbine footprint which makes 7.7 %. G3.5 Pinus brutia woodland: 11 ha will be lost due to site roads which makes 76%, and 13.04 ha will be lost due to turbine footprint which makes 66.2%. G3.F Plantation (<i>P. brutia</i>): 1.92 ha will be lost due to site roads which makes 13.3%, 5.14 ha due to turbine footprint which makes 26.1%, and 0.0127 ha due to the switchyard area, which makes 0.9%. The impact significance of the construction impacts s considered to be <i>moderate</i>.</p> <p><u>Operation phase</u> The operation of the wind farm is expected to have a habitat fragmentation effect mostly in the areas covered by forests. The impact significance of the construction impacts s considered to be <i>moderate</i>.</p>
	<p><u>Residual Impact Significance</u> The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process.
Critical habitat	<i>Impacts on critical habitat not assessed.</i>

Summary for Wind Farm Ovacik	
Flora	<p><u>Construction phase</u></p> <p>One nationally vulnerable (VU) species was identified during the field surveys conducted for the national EIA. <i>Crocus candidus</i> covering approximately 5-25% of the Project area.</p> <p>The impacts considered are the introduction of IAS (Invasive Alien Species), temporary and permanent loss of areas of terrestrial habitats, and the loss of flora species which are present at site.</p> <p>The effects are considered to be felt in the direct footprint of the planned project. The impact significance is considered to be <i>moderate</i>.</p> <p><u>Operation phase</u></p> <p>The VU species identified in the project area is not considered to be affected during the operational phase.</p> <p>The impact significance is considered to be <i>negligible</i>.</p> <p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process. • A 'Landscape Plan' should be developed to restore the vegetation area.
Birds	<p><u>Construction phase</u></p> <p>The impacts related to birds are considered to be only temporary during construction, in terms of edge effects, habitat loss and degradation the forest patches inside the footprint area are going to be cleared for construction. Since the forest is not considered 'mature' therefore presents limited breeding opportunities for birds. Temporary disturbance during construction is considered to be in terms of blasting, air pollution, noise.</p> <p>The forest clearing is expected to have <i>minor</i> impact on some high sensitive species since the forest is young and is not considered to present breeding sites for those critical habitat qualifying species.</p> <p>The impact significance during construction is considered to be <i>minor</i> to <i>moderate</i>.</p> <p><u>Operation phase</u></p> <p>As the planned WPP is located along a path commonly used by migrating and large soaring birds, there are concerns about how the plant's operation might affect these highly sensitive species.</p> <p>The mortality and injury rates are considered to be high at the Ovacik WPP during operation due to the artificial lights which may attract and disorient the species during their nocturnal migrations.</p> <p>Other potentially occurring impacts are displacement, avoidance and barrier effects for migrants, collision and electrocution.</p> <p>Barrier effects should as well be considered as cumulative impacts considering the high development rate nearby.</p> <p>The impact significance during operation is considered to be <i>major</i> for highly sensitive species and <i>moderate</i> for soaring migrants.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate to minor</i> for bird collision and electrocution mortality, and <i>minor</i> in regard to highly sensitive birds and their habitat loss after implementing and considering the following generic mitigation measures:</p>

Summary for Wind Farm Ovacik	
	<ul style="list-style-type: none"> • A good pre-operational and operational monitoring program is needed in order to assess the full scope of risks and manage them including: • Artificial lighting will be managed carefully to avoid attracting and dazing migrants, • The OHL will be marked throughout to increase visibility, • A Shut-down on demand or equivalent turbine management program will be implemented and maintained unless operation monitoring results strongly suggest negligible/low impact, • The Project components will be managed to not offer perching and nesting opportunities, • Safe perching, roosting and nesting opportunities will be provided, • A turbine curtailment approach for minimizing bird mortality will be developed, • Trainings will be provided to raise awareness of all site personnel.
Bats	<p>Construction phase</p> <p>The impacts to bats are considered to be temporary, although the bat species present at site are globally LC species, the significance of the impact is considered to be <i>negligible</i>.</p> <p>Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route. Direct loss of nests and shelters is considered to be limited to the footprint.</p> <p>Operation phase</p> <p>One of the primary factors impacting biodiversity during the operational phase involves the risks of bat species facing collision, electrocution, barotrauma injuries and mortality. While collision with moving turbine blades poses the greatest risk of mortality, other structures such as turbine towers, pylons, fences, and those associated with the switchyard can also cause injury or death.</p> <p>The significance of the operation impacts is considered to be <i>major</i> when it comes to collision, barotrauma mortalities, <i>moderate</i> to <i>major</i> in regard to artificial light and <i>negligible</i> in terms of habitat loss.</p> <p>Residual Impact Significance</p> <p>The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • A good pre-operational and operational monitoring program is needed to assess the full scope of risks and manage them including: • Artificial lighting will be managed carefully to avoid attracting and dazing migrants, • The OHL will be marked throughout to increase visibility, • A Shut-down on demand or equivalent turbine management program will be implemented and maintained unless operation monitoring results strongly suggest negligible/low impact, • The Project components will be managed to not offer perching and nesting opportunities, • Safe perching, roosting and nesting opportunities will be provided, • A turbine curtailment approach for minimizing bat mortality will be developed, • Trainings will be provided to raise awareness of all site personnel.
Other faunal species	<p>Construction phase</p> <p>Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through habitat loss or degradation, disturbances caused by human presence, artificial lighting, dust, and noise. Additionally, there's a risk of injury or mortality to these species during construction and due to increased traffic, as well as temporary habitat fragmentation.</p> <p>The species identified, are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU).</p> <p>The impacts considered during construction phase are habitat loss as a result of vegetation clearing, temporary disturbance due to construction activities</p>

Summary for Wind Farm Ovacik	
	like noise, air pollution and injuries caused by car accidents and loss of nests and breeding sites for small faunal groups. The significance of this impact is considered to be <i>minor</i> .
	<u>Operation phase</u> The disturbance during operation will include vehicular traffic, light and noise, air pollution, and the possibility for deaths caused by traffic. The significance of this impact is considered to be <i>minor</i> .
	<u>Residual Impact Significance</u> The residual impact is considered to be <i>negligible</i> , after implementing and considering the following generic mitigation measures: <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss. • On-site vehicle speed limits should be implemented to avoid potential road-kills. • Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period. • Installing artificial structures within the AoI for nesting, roosting or hibernating fauna such as shelter for terrestrial fauna. • Siting decisions should be made to minimize the injury and mortality risks (consider proximity to roads, OHL and turbines). Site employees should be trained to be aware of significance of habitats and species, nests of fauna species, to avoid any destruction or displacement.
Introduction of IAS	<u>Construction phase</u> <i>Construction impacts have not been rated.</i>
	<u>Operation phase</u> <i>Operational impacts have not been rated.</i>
	<u>Residual Impact Significance</u> The residual impact is considered to be <i>moderate</i> for the KBA Kaz Mountains and <i>minor</i> to flora species, after implementing and considering the following generic mitigation measures: <ul style="list-style-type: none"> • Minimize traffic. • Source goods/materials locally where possible. • Report the presence of any IAS present. • Where IAS are recorded it to perform a 'as-new' wash-down before entering non-infested areas of the site and after working in infested areas. • Train and raise awareness of personnel regarding IAS. • Invasive Species Management Plan should be developed to minimize construction and operation impacts.

15.5 DAMPINAR WIND POWER PLANT

Summary for Dampinar Wind Power Plant	
Name	Dampinar Wind Power Plant (WPP) Project
Description	11 turbines and 46.2 Mwe total installed power, a switchyard, Project roads (i.e., access and site roads) as well as overhead transmission line (OHL) and pylons.
Location	In Tire, located in the Izmir province, and Germencik, in the Aydin province, both in western Türkiye.
Status	Not yet operational
Available Baseline Information for Biodiversity	
1 Protected Areas	Dampinar WPP is not located within a legally protected or internationally recognized area. However, the Project Area of Influence (AoI) =15km of the Project, partially overlaps with two Key Biodiversity Areas (KBA), namely the Küçük Menderes Delta, and Mahal Hills. <ul style="list-style-type: none"> • Küçük Menderes Delta KBA (EGE015), s located approximately 5 km from the nearest wind turbine (WT). This area is a wetland complex that includes a river delta, inland standing water features, marshes,

Summary for Dampinar Wind Power Plant		
	<p>maquis shrubland, olive groves, and other agricultural lands. It hosts a wide range of trigger species, including birds, fish, mammals, plants, and reptiles. While the interaction with Küçük Menderes Delta KBA is expected to be low, it is not negligible.</p> <ul style="list-style-type: none"> Mahal Hills KBA is situated about 8 km from the nearest wind turbine (WT). It encompasses terrestrial, freshwater, and marine systems, with a focus on freshwater and marine environments. All triggers for this KBA have been reasonably scoped out due to the low level of expected interaction with the project. 	
2 Habitat	2.1 Natural habitat	<p>Most of the Project area is located in mixed forest and woodland habitats, there is also the presence of various fields and orchards notable.</p> <p>The following EUNIS habitat types are present in the Area of Influence (AoI) according to the Environmental and Social Impact Assessment (ESIA) conducted by Mott McDonald: G3.5 <i>Pinus nigra</i> woodland, G4.B Mixed mediterranean pine - thermophilus oak woodland, G4.E Mixed mediterranean pine - evergreen oak woodland, G4.D Mixed Black pine (<i>Pinus nigra</i>) - evergreen oak woodland, G1.7 Thermophilus deciduous woodland, I1.1 Intensive unmixed crops, I1.2 Mixed crops of market gardens and horticulture, J1.2 Residential buildings, villages and urban peripheries, J4.2 Road networks, J5.3 Highly artificial non-saline standing waters.</p>
	2.2 Critical habitat	<p>A Critical Habitat Assessment (CHA) has been conducted based on the EBRD PR6 guidelines and available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies.</p> <p>Critical habitat is not triggered.</p> <p>Flora species observed during field surveys considered as PBF are the following:</p> <ul style="list-style-type: none"> <i>Scutellaria orientalis</i>, nationally EN <i>Cyclamen hederifolium</i>, VU <p>Eight bat species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> Savi's Pipistrelle (<i>Hypsugo savii</i>, IUCN LC) Schreiber's Bent-winged Bat (<i>Miniopterus schreibersii</i>, IUCN VU) Long-fingered Bat (<i>Myotis capaccinii</i>, IUCN VU) Giant Noctule (<i>Nyctalus lasiopterus</i>, IUCN VU) Noctule (<i>Nyctalus noctula</i>, IUCN LC) Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>, IUCN LC) Common Pipistrelle (<i>Pipistrellus pipistrellus</i>, IUCN LC) Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>, IUCN LC) <p>Terrestrial species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> Common tortoise (<i>Testudo graeca</i> VU) Marbled Polecat (<i>Vormela peregusna</i> VU) Mouse-tailed dormouse (<i>Myomimus roachi</i> VU) <p>Based on EUNIS level 3 habitat classification, one natural habitat types were considered as <i>priority habitat</i>:</p> <ul style="list-style-type: none"> G3.7: Lowland to montane mediterranean Pinus woodland (excluding Pinus nigra)
	2.3 Ecosystem services	<p>During field surveys, ecosystem services such as farming, forestry, and animal grazing were observed in the Project Area and its close vicinity.</p>

Summary for Dampinar Wind Power Plant		
3 Species	3.1 Flora	<p>National flora surveys were conducted from April 15 to May 13, 2022, with two regional endemic species mainly found in woodland habitats where Pinus species are dominant:</p> <ul style="list-style-type: none"> • <i>Marrubium globosum</i>, LC • <i>Iris schachtii</i>, LC <p>Several endemic species were observed during the Critical Habitat Assessment (CHA) surveys, found in woodland and maquis habitats:</p> <ul style="list-style-type: none"> • <i>Scutellaria orientalis</i>, nationally EN • <i>Astragalus strictispinis</i>, nationally VU • <i>Centaurea hierapolitana</i>, nationally VU • <i>Centaurea polyclada</i>, nationally VU • <i>Centaurea calolepis</i>, nationally LC • <i>Cyclamen hederifolium</i>, nationally VU • <i>Astragalus pisidicus</i>, nationally LC • <i>Salvia pisidica</i>, nationally LC • <i>Astragalus condensatus</i> nationally LC • <i>Astragalus mesogitanus</i>, nationally LC • <i>Astragalus vulnerariae</i> nationally LC • <i>Cytisopsis pseudocytisus subsp. Reeseana</i>, nationally LC • <i>Hedysarum cappadocicum</i>, nationally LC • <i>Trifolium caudatum</i>, nationally LC • <i>Marrubium globosum</i>, nationally LC • <i>Iris schachtii</i>, nationally LC
	3.2 Birds	<p>The position of the planned Dampinar WPP is located close to a minor migratory route, namely the Aegean shore route. As part of the EIA monitoring studies were conducted on April 15th, April 29th, and May 13th, 2022, as well as from August to November 2021 and from March to May 2022.</p> <p>The species identified on site and considered to be of high sensitivity include several raptors and storks, as well species which may use the nearby wetlands for breeding and wintering are: Common Buzzard (<i>Buteo buteo</i>), Eurasian Sparrowhawk (<i>Accipiter nisus</i>) or Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Red-footed Falcon (<i>Falco vespertinus</i>), Egyptian Vulture (<i>Neophron percnopterus</i>), and Black Stork (<i>Ciconia ciconia</i>).</p> <p>The recorded species which are under protection by IUCN are following:</p> <ul style="list-style-type: none"> • Saker Falcon, EN (<i>Falco cherrug</i>, nationally CR) • Egyptian Vulture, EN (<i>Neophron percnopterus</i>, nationally VU) • European Turtle-dove, VU (<i>Streptopelia turtur</i>, nationally VU) <p>VP (Vantage Point) surveys have been conducted as part of the national EIA. Additional VP surveys are planned for 2024.</p>
	3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in August 2021 for a total of 5 day/nights.</p> <p>The following long-distance migrants (<i>Pipistrellus nathusii</i>) and species with high collision risk (<i>Pipistrellus</i> and <i>Nyctalus sp.</i>) were recorded during monitoring studies. Additional species recorded during field surveys include common non-threatened bat species with stable populations. No CH trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review.</p>
	3.4 Other faunal species	<p>During the National EIA 6 amphibian species, 24 reptile species and 31 non-volant species were either observed or were identified as relevant in desktop components.</p> <p>The Common tortoise (<i>Testudo graeca</i>) VU was observed during the monitoring surveys conducted as part of the national EIA, beside the Anatolian Rock Lizard (<i>Anatololacerta oertzeni</i>) LC IUCN which is a regional endemic species.</p>

Summary for Dampinar Wind Power Plant	
	The habitats within the Project area, match those of the Mouse-tailed dormouse (<i>Myomimus roachi</i>) VU, which is a KBA trigger for the Lesser Menderes Delta.
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA	
Protected Areas	<p><u>Construction phase</u></p> <p>Dampinar WPP is not located within a legally protected or internationally recognized area. However, the Indirect Area of Influence (IAoI) of the Project partially overlaps with two Key Biodiversity Areas. Construction activities will impact the KBA in form with indirect impacts (air pollution, invasive species, soil pollution, accidental spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance).</p> <p>The magnitude of the construction impacts is considered to be <i>minor</i>, with the impact significance being <i>moderate</i>.</p>
	<p><u>Operation phase</u></p> <p>Operation activities will impact Küçük Menderes Delta KBA and Bafa Lake KBA which are overlapping with the Indirect Area of Influence. Impacts will form as habitat loss and degradation, disturbance, air pollution, death or injury and Invasive Alien Species (IAS) competition.</p> <p>The qualifying bird species of the overlapping KBA are not likely to be present within the 2 km AoI. Based on this, the operational impacts on the KBAs are considered to be low.</p> <p>The overall magnitude of the impacts is considered to be <i>minor</i>, with the impact significance being <i>moderate</i>.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, • Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process.
Natural habitat	<p><u>Construction phase</u></p> <p>Construction activities will pose an impact to the natural habitats in form of habitat loss and degradation.</p> <p>The Project AoI supports several types of natural habitats. Approximate effected habitats for each type are as follows: Thermophilus deciduous woodland, <i>Pinus brutia</i> woodland, <i>Pinus nigra</i> woodland and other mixed types of forests. Due to limited habitat loss, a high rate of decline in populations is not expected if the relevant species are present. The possibility of construction activities to affect basic biodiversity features is medium. The magnitude of the construction impacts s considered to be <i>moderate</i> and impact significance is <i>moderate</i>.</p>
	<p><u>Operation phase</u></p> <p>The operation of the wind farm is expected to have a habitat fragmentation effect mostly in the areas covered by forests.</p> <p>The significance of the construction impacts s considered to be <i>moderate</i>.</p>
	<p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss,

Summary for Dampinar Wind Power Plant	
	<ul style="list-style-type: none"> All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process. A 'Landscape Plan' should be developed to restore the vegetation area.
Critical habitat	<i>Not relevant - critical habitat was not triggered for the site.</i>
Flora	<p><u>Construction phase</u> One EN and two VU endemic species were identified during the field surveys conducted for the national EIA. Due to the limited habitat loss, a significant decline in populations is not anticipated if the relevant species are present. However, the addition of Invasive Alien Species (IAS) during construction will affect native biodiversity, and the removal of vegetation in agricultural and forested areas will result in both permanent and temporary loss of terrestrial habitats as well as the loss of existing flora species. The impact significance is considered to be <i>moderate</i>.</p> <p><u>Operation phase</u> The possibility of operation activities affecting basic biodiversity features is low. The impact significance is <i>negligible to moderate</i>.</p> <p><u>Residual Impact Significance</u> The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species. The residual impact is considered to be <i>minor</i> after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> All construction and operational working areas should be kept to a minimum to reduce habitat loss, All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process. A 'Landscape Plan' should be developed to restore the vegetation area.
Birds	<p><u>Construction phase</u> The impacts related to birds are considered to be only temporary during construction, in terms of edge effects, habitat loss and degradation the forest patches inside the footprint area are going to be cleared for construction. Since the forest is not considered 'mature' therefore presents limited breeding opportunities for birds. Temporary disturbance during construction is considered to be in terms of blasting, air pollution, noise. The impact significance during construction is considered to be <i>minor</i> to <i>moderate</i>.</p> <p><u>Operation phase</u> Collision and electrocution pose significant risks to resident and migratory large soaring birds and other conservation-important species during operation. Other impacts include displacement, avoidance, and barrier effects for migrants, along with increased disturbance, pollution, and collision risk. Artificial lights can exacerbate collision risks by attracting migrating songbirds. While barrier effects are less concerning than collisions and electrocutions, they still pose a high energetic cost to migrating birds, potentially leading to death. The impact during operation is considered to be <i>major</i> for highly sensitive species and <i>moderate</i> for soaring migrants.</p>

Summary for Dampinar Wind Power Plant	
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>major</i> for bird collision and electrocution mortality, and minor in regard to highly sensitive birds and their habitat loss after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.
Bats	<p><u>Construction phase</u></p> <p>Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route. The impacts to bats are considered to be temporary, although the bat species present at site are globally LC species, the impact significance is considered to be <i>negligible</i>.</p>
	<p><u>Operation phase</u></p> <p>One of the primary factors impacting biodiversity during the operational phase involves the risks of bat species facing collision, electrocution, barotrauma injuries and mortality. While collision with moving turbine blades poses the greatest risk of mortality, other structures such as turbine towers, pylons, fences, and those associated with the switchyard can also cause injury or death.</p> <p>The significance of the operation impacts is considered to be <i>major</i> when it comes to collision / barotrauma mortalities, <i>moderate to major</i> in regard to artificial light and <i>negligible</i> in terms of habitat loss.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>major</i>, after implementing and considering the following mitigation measures:</p> <ul style="list-style-type: none"> A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.
Other faunal species	<p><u>Construction phase</u></p> <p>Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through blasting and collision risks. The species identified, are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU).</p> <p>The impact significance is considered to be <i>minor</i>.</p>
	<p><u>Operation phase</u></p> <p>The disturbance during operation will include vehicular traffic-and the possibility for deaths caused by traffic.</p> <p>Whilst the impact significances are <i>negligible</i> for mammals and herpetofauna, the impact significance considering the Common tortoise is considered to be of <i>minor</i> significance.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>negligible</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> On-site vehicle speed limits should be implemented to avoid potential road-kills. Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period.
Introduction of IAS	<p><u>Construction phase</u></p> <p><i>Construction impacts have not been rated.</i></p>
	<p><u>Operation phase</u></p> <p><i>Operational impacts have not been rated.</i></p>

Summary for Dampınar Wind Power Plant

Residual Impact Significance

The residual impact is considered to be *minor*, after implementing and considering the following generic mitigation measures:

- Minimize traffic.
- Source goods/materials locally where possible.

15.6 AKKÖY WIND POWER PLANT

Summary for Akköy Wind Power Plant

Name	Akköy Wind Power Plant (WPP) Project	
Description	6 turbines and 25.2 Mwe total installed power, a switchyard, Project roads (i.e., access and site roads) as well as overhead transmission line (OHL) and pylons.	
Location	In Aydın Province, Didim District, Akköy and Yeniköy Villages.	
Status	Not yet operational	
Available Baseline Information for Biodiversity		
1 Protected Areas	<p>Overlaps with Büyük Menderes KBA-IBA. In addition, the direct area of influence overlaps with Büyük Menderes Delta national park (national protected area) and indirect area of influence overlaps with Lake Bafa KBA-IBA which is designated as a legally Protected Areas (National Park and National reserve) as well.</p> <ul style="list-style-type: none"> • The Büyük Menderes Delta, situated west of Aydın within Söke and Didim districts, is delineated to the east by the Söke-Didim highway and bordered to the north by the Dilek Peninsula. Habitats include both saltwater and freshwater ecosystems, with glassworts covering salt marsh flats, intermittent reed beds, and hilly areas supporting dwarf shrub communities and garigue. The delta meets KBA criteria for the globally endangered bellflower species <i>Campanula raveyi</i>. It serves as crucial breeding and wintering grounds for numerous waterfowl species, including the Mediterranean gull, and hosts summer migrant lesser kestrels predominantly in southern grain fields and meadows. • Lake Bafa, situated in the lower Büyük Menderes basin near the sea, İzikce Islands and Kuyulu Island are vital bird habitats on the lake. The lake's habitats include reed and marsh areas at river mouths, rocky terrain, and islands serving as breeding sites for waterfowl, notably herons. The lake's western shores are marshy, and surrounding vegetation comprises olive groves, Mediterranean maquis, frigana, and scattered Turkish pine. Among its notable species is the rare <i>Fritillaria milasense</i>, meeting the KBA criteria. Lake Bafa KBA is an important breeding area for the nationally threatened species Bonelli's Eagle (<i>Aquila fasciata</i>) which is obscured from public records due to conservation concerns. The development of wind energy in the region has been identified as a threat to the integrity of the KBA. 	
2 Habitat	2.1 Natural habitat	<p>Most of the Project area is being located in habitats with maquis vegetation dominated by xeromorphic.</p> <p>The six areas where the turbines are situated are marked by the presence of <i>frigana</i> (dense shrubland vegetation) and <i>garigue</i>, which have emerged due to the disturbance of maquis and shrubland. Occasionally, these areas are interspersed with olive tree plantations.</p> <p>The following EUNIS habitat types are present in the Area of Influence (AoI) according to the Critical Habitat Assessment (CHA) conducted by Mott McDonald: F5.3 Pseudomaquis, J1.2 Residential buildings, villages and urban peripheries, J4.2 Road networks, J4.5 Hard-surfaced areas of ports, I1.2 Mixed crops of market gardens and horticulture.</p>

Summary for Akköy Wind Power Plant		
	2.2 Critical habitat	<p>A Critical Habitat Assessment (CHA) has been conducted based on the EBRD PR6 guidelines and available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies.</p> <p>CHA for birds for criteria 1-3 was based on existing studies which were performed for other nearby wind farms and their bird surveys.</p> <p>Critical habitat is potentially triggered for the following bird species:</p> <ul style="list-style-type: none"> • Dalmatian Pelican – IUCN NT (<i>Pelecanus crispus</i>, nationally VU) <p>Bird species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Bonelli’s Eagle – IUCN LC (<i>Aquila fasciata</i>, nationally EN) • Collared Pratincole – IUCN LC (<i>Glareola pratincola</i>, nationally VU) <p>Bat species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Savi’s Pipistrelle – IUCN LC (<i>Hypsugo savii</i>) • Schreiber’s Bent-winged Bat – IUCN VU (<i>Miniopterus schreibersii</i>) • Long-fingered Bat – IUCN VU (<i>Myotis capaccinii</i>) • Noctule – IUCN LC (<i>Nyctalus noctule</i>) • Nathusius’ Pipistrelle – IUCN LC (<i>Pipistrellus nathusii</i>) • Common Pipistrelle – IUCN LC (<i>Pipistrellus pipistrellus</i>) • Particoloured Bat – IUCN LC (<i>Vespertilio murinus</i>) <p>Flora species observed during field surveys considered as PBF are the following:</p> <ul style="list-style-type: none"> • <i>Globularia alypum</i>, nationally VU <p>Terrestrial species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> • Common Tortoise (<i>Testudo graeca</i>, nationally VU)
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, and animal grazing.
3 Species	3.1 Flora	<p>National flora surveys were conducted from April 15 to May 13, 2022, with one regional endemic species mainly found in maquis habitats:</p> <ul style="list-style-type: none"> • <i>Veronica donii</i>, nationally VU <p>Three rare and restricted range non-endemic flora species were observed during the surveys, found mainly in scrublands of coastal garrigues:</p> <ul style="list-style-type: none"> • <i>Globularia alypum</i> • <i>Ophrys speculum subsp. speculum</i> • <i>Ophrys holoserica subsp. heterochila</i>
	3.2 Birds	<p>The position of the planned Akköy WPP is located close to a minor migratory route, namely the Aegean shore route. As part of the EIA monitoring studies were conducted on April 15th, April 29th, and May 13th, 2022, as well as from August to November 2021 and from March to May 2022.</p> <p>The species identified on site and considered to be of high sensitivity include several raptors and storks, as well species which may use the nearby wetlands for breeding and wintering are: Sparrowhawk (<i>Accipiter brevipes</i>), Northern Goshawk (<i>Acipiter gentilis</i>), Booted Eagle (<i>Hieraaetus pennatus</i>), Black Stork (<i>Ciconia nigra</i>), Common buzzard (<i>Buteo buteo</i>), Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Lesser Spotted Eagle (<i>Clanga pomarina</i>), White Stork (<i>Ciconia ciconia</i>), Eurasian Kestrel (<i>Falco tinnunculus</i>), Great White Pelican (<i>Pelecanus onocrotalus</i>), and Glossy Ibis (<i>Plegafis falcinellus</i>).</p>

Summary for Akköy Wind Power Plant	
	VP (Vantage Point) surveys have been conducted as part of the national EIA. Additional VP surveys are planned for 2024.
3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in August 2021 for a total of 6 day/nights.</p> <p>Species recorded during field surveys include common non-threatened bat species with stable populations. No CH trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review.</p>
3.4 Other faunal species	<p>During the National EIA 9 amphibian species, 34 reptile species and 36 non-volant species were either observed or were identified as relevant in desktop components. Most of these species are common and widespread.</p> <p>Considering the characteristics and habitats present, as well as the extent of human activity in the region, the Common Tortoise (<i>Testudo graeca</i>), classified as Vulnerable (VU) and recorded in the National EIA studies, is anticipated to be the only significant species with a notable presence in the project area among those listed.</p>
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA	
Protected Areas	<p><u>Construction phase</u> Akköy WPP is located within the Büyük Menderes National Park and overlaps with the Indirect Area of Influence (IAoI) of Lake Bafa Nature Reserve, both designated as KBAs. Construction activities will impact the KBA in form with indirect impacts (vegetation clearing, air pollution, invasive species, soil pollution, accidental spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance). The magnitude of the construction is considered to be <i>minor</i>, with the impact significance being <i>moderate</i>.</p> <p><u>Operation phase</u> Operation activities will impact Büyük Menderes Delta KBA in AoI and Bafa Lake KBA which are overlapping with the Direct and Indirect Area of Influence. Impacts will form as habitat loss and degradation, disturbance, air pollution, death or injury and (Invasive Alien Species) IAS competition. The overall magnitude of the impacts is considered to be <i>major</i>, with the impact significance being <i>major</i> as well.</p> <p><u>Residual Impact Significance</u> The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection should be conducted during the operation phase for priority biodiversity features in accordance with the Biodiversity Site Survey Methodology and BMP.
Natural habitat	<p><u>Construction phase</u> Construction activities will pose an impact to the natural habitats in form of habitat loss and degradation. The Project AoI supports one natural habitat type pseudomaquis. The impact significance is considered to be <i>moderate</i>.</p> <p><u>Operation phase</u> The operation of the wind farm is expected to have a habitat fragmentation effect mostly in the areas covered by garruige and pseudomaquis habitats. The impact significance is considered to be <i>moderate</i>.</p>

Summary for Akköy Wind Power Plant	
	<p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process. • A 'Landscape Plan' should be developed to restore the vegetation area.
Critical habitat	<i>Impacts on critical habitat have not been assessed.</i>
Flora	<p><u>Construction phase</u></p> <p>Only one species with the status Vulnerable (VU) was identified during the field surveys conducted for the National EIA. Due to the limited habitat loss, a significant decline in populations is not anticipated if the relevant species are present.</p> <p>However, the addition of Invasive Alien Species (IAS) during construction will affect native biodiversity, and the removal of vegetation in agricultural and forested areas will result in both permanent and temporary loss of terrestrial habitats as well as the loss of existing flora species.</p> <p>The impact significance is considered to be <i>moderate</i>.</p> <p><u>Operation phase</u></p> <p>Due to limited habitat loss, a high rate of decline in populations is not expected.</p> <p>The impact significance is considered to be <i>negligible</i>.</p> <p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p> <p>The residual impact is considered to be <i>minor</i> after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process. • A 'Landscape Plan' should be developed to restore the vegetation area.
Birds	<p><u>Construction phase</u></p> <p>The impacts related to birds are considered to be temporary during construction, in terms of disturbance caused by noise, artificial lighting, presence of people, movement of vehicles and habitat loss (e.g. loss of nesting structures).</p> <p>The impact significance during construction is considered to be <i>moderate</i>.</p>

Summary for Akköy Wind Power Plant	
	<p><u>Operation phase</u> Collision and electrocution pose significant risks to resident and migratory large soaring birds and other conservation-important species during operation. Other impacts include displacement, avoidance, and barrier effects for migrants, along with increased disturbance, pollution, and collision risk. Artificial lights can exacerbate collision risks by attracting migrating songbirds. While barrier effects are less concerning than collisions and electrocutions, they still pose a high energetic cost to migrating birds, potentially leading to death. The impact during operation is considered to be <i>major</i> for highly sensitive species and <i>moderate</i> for soaring migrants. The impact</p>
	<p><u>Residual Impact Significance</u> The residual impact is considered to be <i>major</i> for bird collision and electrocution mortality, and <i>minor</i> in regard to highly sensitive birds and their habitat loss after implementing and considering mitigation measures. A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.</p>
Bats	<p><u>Construction phase</u> Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route. The impacts to bats are considered to be temporary, although the bat species present at site are globally LC species, the impact significance is considered to be <i>negligible</i>.</p>
	<p><u>Operation phase</u> Considering the high collision / barotrauma mortality risk and migration processes, bat species with high sensitivity were identified. Collision effect can be compounded by presence of artificial lights. It has been evaluated that operational impacts may have a major impact on these species. Other impact types during operational phase are displacement and avoidance and barrier effects (for migrants) which are usually less pronounced, however can add up in the cumulative sense. The overall magnitude of impact during operation is considered to be <i>major</i> and <i>negligible</i> and impact significances are <i>major and negligible</i> as well.</p>
	<p><u>Residual Impact Significance</u> The residual impact is considered to be <i>major</i>, after implementing and considering the mitigation measures: A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.</p>
Other faunal species	<p><u>Construction phase</u> Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through blasting and collision risks. The species identified, are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU). The impact significance is considered to be <i>minor</i>.</p>
	<p><u>Operation phase</u> The disturbance during operation will include vehicular traffic, and the possibility for deaths caused by traffic. Whilst the impact significances are <i>negligible</i> for mammals and herpetofauna, the impact significance considering the Common tortoise is considered to be of <i>minor</i> significance.</p>
	<p><u>Residual Impact Significance</u> The residual impact is considered to be <i>negligible</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> On-site vehicle speed limits should be implemented to avoid potential road-kills.

Summary for Akköy Wind Power Plant	
	<ul style="list-style-type: none"> Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period.
Introduction of IAS	<u>Construction phase</u> <i>Construction impacts have not been rated.</i>
	<u>Operation phase</u> <i>Operational impacts have not been rated.</i>
	<u>Residual Impact Significance</u> The residual impact is considered to be <i>minor</i> , after implementing and considering the following generic mitigation measures: <ul style="list-style-type: none"> Minimize traffic. Source goods/materials locally where possible.

15.7 HACIHIDIRLAR WIND POWER PLANT

Summary for Hacıhıdırlar Wind Power Plant	
Name	Hacıhıdırlar Wind Power Plant (WPP) Project
Description	15 turbines and 63 Mwe total installed power, a switchyard, Project roads (i.e., access and site roads) and overhead transmission line (OHL).
Location	Karacasu District, Karacaören and Ataköy Neighbourhoods; Denizli Province, Sarayköy and Babadağ District.
Status	Not yet operational
Available Baseline Information for Biodiversity	
1 Protected Areas	<p>The Project area overlaps with the Key Biodiversity Area "Akdağ -Denizli" (EGE026), and partially with the Büyük Menderes Delta, which are both designated Key Biodiversity Areas (KBAs) and Important Bird and Biodiversity Areas (IBAs).</p> <ul style="list-style-type: none"> The Akdağ -Denizli KBA encompasses the Akdağ mountain range, Ortaca Mountain, the Dandalaz Creek Valley, and a segment of the Büyük Menderes River. The mountainous KBA is mainly covered by coniferous forest, with Scots pine predominant at lower elevations and black pine at higher elevations. Alpine meadows are present in the higher-altitude alpine zone. The KBA qualifies for ten plant taxa, including the endemic <i>Campanula bipinnatifida</i>. The Tavas frog (<i>Rana tavasensis</i>) is exclusive to this region. The striped viper (<i>Montivipera xanthina</i>), globally endangered, meets KBA criteria. Within the KBA segment of the Büyük Menderes River resides the Ulubat fish (<i>Acanthobrama mirabilis</i>), an endemic freshwater fish species in Türkiye. Büyük Menderes Delta KBA and IBA is located at the junction between the Büyük Menderes River and the Aegean sea and comprises lagoons (separated from the sea by a narrow sandbar), extensive salt-steppe and mudflats. Several breeding/wintering waterbirds of conservation importance (including Pelican) are the reasons for the designation as KBA/IBA.
2 Habitat	<p>Most of the Project area is being located in Woodland mainly <i>Pinus brutia</i>, <i>Pinus nigra</i> and grassland habitats.</p> <p>The following EUNIS habitat types are present in the Area of Influence (AoI) according to the Environmental and Social Impact Assessment (ESIA) conducted by Mott McDonald: E4.4 Calcareous alpine and subalpine grassland, G1.A Meso- and eutrophic Quercus, Carpinus, Fraxinus, Acer, Tilia, Ulmus and related woodland (Galio-Carpinetum oak-hornbeam forests), G3.5 Pinus nigra woodland, G3.7 Pinus brutia woodland, I1.2 Mixed crops of market gardens and horticulture, J1.2 Residential buildings of villages and urban peripheries.</p>
2.1 Natural habitat	

Summary for Hacıdırlar Wind Power Plant		
2.2 Critical habitat		<p>A Critical Habitat Assessment (CHA) has been conducted based on the EBRD PR6 guidelines and available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies.</p> <p>Critical habitat not triggered.</p> <p>Six flora species are considered as PBF:</p> <ul style="list-style-type: none"> • <i>Centaurea aphrodisea</i> (nationally VU) • <i>Colchicum micaceum</i> (nationally EN) • <i>Minuartia recurve</i> (nationally VU) • <i>Nephelochloa orientalis</i> (nationally VU) • <i>Phlomis carica</i> (nationally VU) • <i>Erysimum caricum</i> (nationally CR) <p>A bird species observed during field surveys and considered as PBFs is the following:</p> <ul style="list-style-type: none"> • European Turtle-Dove (<i>Streptopelia turtur</i>, nationally VU) <p>Seven bat species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Long-fingered Bat (<i>Myotis capaccinii</i>, IUCN VU) • Lesser Noctule (<i>Nyctalus leisleri</i>, IUCN LC) • Noctule (<i>Nyctalus noctula</i>, IUCN LC) • Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>, IUCN LC) • Common Pipistrelle (<i>Pipistrellus pipistrellus</i>, IUCN LC) • Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>, IUCN LC) • Particoloured Bat (<i>Vespertilio murinus</i>, IUCN LC) <p>Terrestrial species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> • Common Tortoise (<i>Testudo graeca</i>, VU) <p>Two invertebrate species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> • Big-Bellied Glandular Bush-Cricket (<i>Bradyporus macrogaster</i>, EN) • <i>Poecilium kasnaki</i>, EN <p>Based on EUNIS level 3 habitat classification, three natural habitat types were considered as <i>priority habitat</i></p> <ul style="list-style-type: none"> • G3.5-Pinus nigra woodland, LC • G1.7-Thermophilous deciduous woodland, LC • E1.2-Perennial calcareous grassland and basic steppes, NT
	2.3 Ecosystem services	No ecosystem service was pinpointed/observed during the field surveys conducted for the National EIA.
3 Species	3.1 Flora	<p>National flora surveys were conducted between April and May 2022, with several regional endemic species mainly found in <i>P. nigra</i> and <i>P. brutia</i> habitats:</p> <ul style="list-style-type: none"> • <i>Colchicum micaceum</i> EN nationally • <i>Nephelochloa orientalis</i> VU nationally • <i>Centaurea aphrodisea</i> VU nationally • <i>Bolanthus minuartioides</i> LC nationally • <i>Asyneuma michauxioides</i> LC nationally • <i>Astragalus acmonotrichus</i> LC nationally • <i>Astragalus angustiflorus subsp. anatolicus</i> LC nationally • <i>Astragalus angustifolius subsp. longidens</i> LC nationally

Summary for Hacıhidırlar Wind Power Plant	
	<ul style="list-style-type: none"> • <i>Astragalus depressus</i> var. <i>tasheliensis</i> LC nationally • <i>Astragalus mesogitanus</i> LC nationally • <i>Colutea melanocalyx</i> LC nationally • <i>Trigonella procumbens</i> LC nationally • <i>Trigonella plicata</i> LC nationally • <i>Hypericum aviculariifolium</i> LC nationally • <i>Corydalis wendelboi</i> subsp. <i>wendelboi</i> LC nationally • <i>Linaria corifolia</i> LC nationally • <i>Ranunculus reuterianus</i> LC nationally • <i>Muscari latifolium</i> LC nationally • <i>Gagea bithynica</i> LC nationally • <i>Iris schachtii</i> LC nationally • <i>Hyacinthella heldreichii</i> LC nationally • <i>Cyanus reuterianus</i> var. <i>phrygia</i> LC nationally • <i>Bromus cappadocicus</i> subsp. <i>sclerophyllus</i> LC nationally • <i>Minuartia recurva</i> VU nationally • <i>Phlomis carica</i> VU nationally • <i>Erysimum caricum</i> CR nationally <p>Two rare and restricted range non-endemic flora species were observed during the surveys, found mainly in scrublands of coastal garrigues:</p> <ul style="list-style-type: none"> • <i>Tulipa orphanidea</i>, LC nationally • <i>Tulipa sylvestris</i> var. <i>australis</i>, LC nationally
3.2 Birds	<p>The position of the planned Hacıhidırlar WPP is located close to a minor migratory route, namely the Aegean shore route. As part of the EIA monitoring studies were conducted between 6th and 13th May 2022, as well as from August to November 2021 and from March to May 2022.</p> <p>The species identified on site and considered to be of high sensitivity include several raptors and storks, as well species which may use the nearby wetlands for breeding and wintering are: Eurasian Sparrowhawk (<i>Accipiter nisus</i>), Northern Goshawk (<i>Accipiter gentilis</i>), Booted Eagle (<i>Hieraaetus pennatus</i>), Common buzzard (<i>Buteo buteo</i>), Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Peregrine Falcon (<i>Falco peregrinus</i>), Lesser Spotted Eagle (<i>Clanga pomarina</i>), White Stork (<i>Ciconia ciconia</i>), Eurasian Kestrel (<i>Falco tinnunculus</i>).</p> <p>VP (Vantage Point) surveys have been conducted as part of the national EIA. Additional VP surveys are planned for 2024.</p>
3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in August and September 2021 for a total of 6 day/nights.</p> <p>The following long-distance migrants (<i>Pipistrellus nathusii</i>) and species with high collision risk (<i>Pipistrellus</i> and <i>Nyctalus lasiopterus</i>) were recorded during monitoring studies. Additional species recorded during field surveys include common non-threatened bat species with stable populations.</p> <p>No CH trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review.</p>
3.4 Other faunal species	<p>During the National EIA 8 amphibian species, 31 reptile species and 31 non-volant species were either observed or were identified as relevant in desktop components. Most of the observed species are common and widespread species with stable population numbers.</p> <p>The Common tortoise (<i>Testudo graeca</i>) VU was observed during the monitoring surveys conducted as part of the national EIA, beside the Anatolian Rock Lizard (<i>Anatololacerta oertzeni</i>) LC IUCN which is a regional endemic species.</p> <p><i>Bradyporus macrogaster</i>, and <i>Poecilium kasnaki</i> were identified as potentially present in desktop studies and might necessitate further baseline information.</p>

Summary for Hacıdırlar Wind Power Plant	
	<p><i>Bradyporus macrogaster</i> (EN) inhabits steppe-like habitats dominated by xeric grasses and sparse scrub, in some areas like the Aegean coast of Anatolia it enters Mediterranean vegetation, such as sparse xerothermic oak forests or scrub or mesoxeric grass associations.</p>
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA	
Protected Areas	<p><u>Construction phase</u> Hacıdırlar WPP is not located within a legally protected or internationally recognized area. However, the WPP is located within the "Akdağ -Denizli" (EGE026) and overlaps partially with the Büyük Menderes River. Construction activities will impact the KBA in form of increased noise levels, air pollution, vibration, invasive species, soil pollution, accidental spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance). The impact significance is considered to be <i>major</i>.</p>
	<p><u>Operation phase</u> Operation activities will impact Akdağ -Denizli KBA and the Büyük Menderes River KBA which are overlapping with the Direct and Indirect Area of Influence. During operation, impacts are primarily expected from vehicle collisions occurring during maintenance activities. The impact significance is considered to be <i>moderate</i>.</p>
	<p><u>Residual Impact Significance</u> The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for, and priority biodiversity features and the seeds may be used during the restoration process.
Natural habitat	<p><u>Construction phase</u> Construction activities will pose an impact to the natural habitats in form of habitat loss and degradation. The habitat loss and fragmentation effects are expected mainly to take place in forest areas due to opened access roads and turbine settlements. The magnitude of the construction impacts s considered to be <i>major</i> and impact significance is <i>major</i>.</p>
	<p><u>Operation phase</u> The operation of the wind farm is expected to have a habitat fragmentation effect mostly in the <i>P. nigra</i> and <i>P. brutia</i> forest areas. The magnitude of the construction impacts s considered to be <i>major</i> with the impact significance being <i>major</i> as well.</p>
	<p><u>Residual Impact Significance</u> The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species. The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites,

Summary for Hacihıdırlar Wind Power Plant	
	<ul style="list-style-type: none"> Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process. A 'Landscape Plan' should be developed to restore the vegetation area.
Critical habitat	<i>Not relevant - critical habitat not triggered at the site.</i>
Flora	<p><u>Construction phase</u> The addition of Invasive Alien Species (IAS) during construction will affect native biodiversity, and the removal of vegetation in agricultural and forested areas will result in both permanent and temporary loss of terrestrial habitats as well as the loss of existing flora species. The magnitude of the construction impacts is considered to be <i>major</i> with the impact significance being <i>major</i> as well.</p> <p><u>Operation phase</u> Due to limited habitat loss, a high rate of decline in populations is not expected. The impact significance is considered to be <i>negligible</i>.</p> <p><u>Residual Impact Significance</u> The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species. The residual impact is considered to be <i>moderate</i> after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> All construction and operational working areas should be kept to a minimum to reduce habitat loss, All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process. A 'Landscape Plan' should be developed to restore the vegetation area.
Birds	<p><u>Construction phase</u> The impacts related to birds are considered to be temporary during construction, in terms of disturbance caused by noise, artificial lighting, presence of people, movement of vehicles and habitat loss (e.g. loss of nesting structures). The impact significance during construction is considered to be <i>moderate</i>.</p> <p><u>Operation phase</u> Collision and electrocution pose significant risks to resident and migratory large soaring birds and other conservation-important species during operation. Other impacts include displacement, avoidance, and barrier effects for migrants, along with increased disturbance, pollution, and collision risk. Artificial lights can exacerbate collision risks by attracting migrating songbirds. While barrier effects are less concerning than collisions and electrocutions, they still pose a high energetic cost to migrating birds, potentially leading to death. The impact during operation is considered to be <i>major</i> for highly sensitive species and <i>moderate</i> for soaring migrants. The impact</p> <p><u>Residual Impact Significance</u> The residual impact is considered to be <i>major</i> for bird collision and electrocution mortality, and <i>minor</i> in regard to highly sensitive birds and their habitat loss after implementing and considering mitigation measures.</p>

Summary for Hacıhıdırlar Wind Power Plant	
	A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.
Bats	<p><u>Construction phase</u></p> <p>Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route.</p> <p>The impacts to bats are considered to be temporary, although the bat species present at site are globally VU and LC species, the impact significance is considered to be <i>negligible</i>.</p>
	<p><u>Operation phase</u></p> <p>Considering the high collision / barotrauma mortality risk and migration processes, bat species with high sensitivity were identified. Collision effect can be compounded by presence of artificial lights.</p> <p>It has been evaluated that operational impacts may have a major impact on these species. Other impact types during operational phase are displacement and avoidance and barrier effects (for migrants) which are usually less pronounced, however can add up in the cumulative sense.</p> <p>The overall magnitude of impact during operation is considered to be <i>major</i> and <i>negligible</i> and impact significances are <i>major and negligible</i> as well.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>major</i>, after implementing and considering the mitigation measures:</p> <p>A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.</p>
Other faunal species	<p><u>Construction phase</u></p> <p>Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through blasting and collision risks.</p> <p>The species identified, are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU).</p> <p>The impact significance is considered to be <i>minor</i>.</p>
	<p><u>Operation phase</u></p> <p>The disturbance during operation will include vehicular traffic, and the possibility for deaths caused by traffic.</p> <p>Whilst the impact significances are <i>negligible</i> for mammals and herpetofauna, the impact significance considering the Common tortoise is considered to be of <i>minor</i> significance.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • On-site vehicle speed limits should be implemented to avoid potential road-kills. • Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period.
Introduction of IAS	<p><u>Construction phase</u></p> <p><i>Construction impacts have not been rated.</i></p>
	<p><u>Operation phase</u></p> <p><i>Operational impacts have not been rated.</i></p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • Minimize traffic. <p>Source goods/materials locally where possible.</p>

15.8 IHLAMUR WIND POWER PLANT

Summary for Ihlamur Wind Power Plant	
Name	Ihlamur Wind Power Plant (WPP) Project
Description	18 turbines and 75.6 MWm total installed power, a switchyard, Project roads (i.e., access and site roads) and overhead transmission line (OHL).
Location	Canakkale Province, Yenice District, Yalıoba, Karasu, Güzeloba and Kabalı Neighbourhoods and Balıkesir Province Gonen District, , Findikli Neighborhood.
Status	Not yet operational
Available Baseline Information for Biodiversity	
1 Protected Areas	<p>The Project area does not overlap any legally protected or internationally recognized area. The AoI overlaps with the Kaz Dağları ('Kaz Mountains') MAR008 which is a designated Key Biodiversity Area (KBA) and International Bird and Biodiversity Area (IBA):</p> <ul style="list-style-type: none"> • Kaz Dağları (Kaz Mountains) – spanning 150,200 hectares, encompass various vegetation types including maquis, shrubland, and forests. The southern slopes feature red pine forests, while higher elevations are dominated by black pine forests. Additionally, the area hosts rich maquis communities and olive groves. • Notable species include the Kazdag Fir and oriental beech, along with diverse bird and mammal species. Of particular importance are predatory birds like Krüper's Nuthatch, Golden Eagle, and Peregrine Falcon. Mammals include globally significant species like Mehely's horseshoe bat and Mediterranean horseshoe bat. The area also supports <i>Capoeta bergamae</i>, a near-threatened freshwater fish species. <p>There are five different International Bird Areas (IBAs) around the Ihlamur WPP, with the closest being Lake Manyas, located 30 km northeast of the project site.</p>
2 Habitat	<p>2.1 Natural habitat</p> <p>Most of the project area is situated in thermophilus deciduous woodland and areas of intensive unmixed crops. Additionally, there are regions of <i>Pinus nigra</i> woodland and grassland.</p> <p>The following EUNIS habitat types are present in the Area of Influence (AoI) according to the Environmental and Social Impact Assessment (ESIA) conducted by Mott McDonald: G1.A Meso- and eutrophic <i>Quercus</i>, <i>Carpinus</i>, <i>Fraxinus</i>, <i>Acer</i>, <i>Tilia</i>, <i>Ulmus</i> and related woodland (<i>Galio-Carpinetum</i> oak-hornbeam forests); G1.3 Mediterranean riparian woodland; G1.7 Thermophilus deciduous woodland; G1.6 Beech woodland; F5.2 Mediterranean maquis and arborescent matorral; E1.2 Perennial calcareous grassland and basic steppes; E2.1 Permanent mesotrophic pastures and aftermath-grazed meadows; C2.3 Permanent non-tidal, smooth-flowing watercourses; J1.2 Residential buildings of villages and urban peripheries; J3.2 Active opencast mineral extraction sites, including quarries; I1.1 Intensive unmixed crops.</p> <p>2.2 Critical habitat</p> <p>A Critical Habitat Assessment (CHA) has been conducted based on the EBRD PR6 guidelines and available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies. CHA for birds for criteria 1-3 was based on existing studies which were performed for other nearby Wind Farms and their bird surveys.</p> <p>A single bird species <i>potentially</i> triggers CH, namely the Lesser Spotted Eagle (<i>Clanga pomarine</i>, nationally EN).</p> <p>Five bird species observed during field surveys and considered as PBFs are the following:</p>

Summary for Ihlamur Wind Power Plant		
		<ul style="list-style-type: none"> • Imperial Eagle (<i>Aquila heliaca</i>, nationally EN) • Greater Spotted Eagle (<i>Clanga clanga</i>, nationally VU) • Red-footed Falcon (<i>Falco vespertinus</i>, IUCN VU) • Egyptian Vulture (<i>Neophron percnopterus</i> IUCN EN) • European Turtle-Dove (<i>Streptopelia turtur</i>, nationally VU) <p>Flora species observed during field surveys are all considered as PBF:</p> <ul style="list-style-type: none"> • <i>Cyclamen hederifolium</i> (nationally VU) • <i>Cirsium balikesirense</i> (nationally VU) • <i>Erodium somanum</i> (nationally EN) <p>Nine bat species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> • Savi's Pipistrelle (<i>Hypsugo savii</i>, IUCN LC), • Schreiber's Bent-winged Bat (<i>Miniopterus schreibersii</i>, IUCN VU) • Long-fingered Bat (<i>Myotis capaccinii</i>, IUCN VU) • Giant Noctule (<i>Nyctalus lasiopterus</i>, IUCN VU) • Lesser Noctule (<i>Nyctalus leisleri</i>, IUCN LC) • Noctule (<i>Nyctalus noctula</i>, IUCN LC) • Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>, IUCN LC) • Common Pipistrelle (<i>Pipistrellus pipistrellus</i>, IUCN LC) • Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>, IUCN LC) <p>Terrestrial species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> • Common Tortoise (<i>Testudo graeca</i>, VU) • Marbled Polecat (<i>Vormela peregusna</i>, VU) • Roe deer (<i>Capreolus capreolus</i>, LC) • Brown bear (<i>Ursus arctos</i>, LC) <p>Based on EUNIS level 3 habitat classification, four natural habitat types were considered as <i>priority habitat</i>;</p> <ul style="list-style-type: none"> • E1.2 Perennial calcareous grassland and basic steppes NT • G1.7: Thermophilous deciduous woodland LC • G1.6: Fagus woodland NT • G1.A: Meso- and eutrophic Quercus, Carpinus, Fraxinus, Acer, Tilia, Ulmus and related Woodland NT
	2.3 Ecosystem services	Limited information regarding ecosystem services such as farming, and animal grazing.
3 Species	3.1 Flora	<p>National flora surveys were conducted from 15th to 23rd October 2021, and on 4th October 2023 by Mott MacDonald.</p> <p>Species recorded during the national flora surveys include several regional endemic species mainly found in woodland habitats:</p> <ul style="list-style-type: none"> • <i>Erodium somanum</i> (nationally EN) • <i>Cirsium balikesirense</i> (nationally VU) <p>Widespread Endemic Species:</p> <ul style="list-style-type: none"> • <i>Campanula lyrata</i> subsp. <i>Lyrata</i> (nationally LC) • <i>Dianthus anatolicus</i> (nationally LC) • <i>Stachys cretica</i> subsp. <i>smyrnaea</i> (nationally LC) <p>Non-Endemic Rare Species</p> <ul style="list-style-type: none"> • <i>Cyclamen hederifolium</i> (nationally VU)
	3.2 Birds	The position of the planned Ihlamur WPP is located close to a minor migratory route, namely the Dardenelles route. As part of the EIA monitoring studies were conducted on between August 18 th , and October 17 th , 2021, as well as between March 24 th and April the 7 th 2022.

Summary for Ihlamur Wind Power Plant	
	<p>The species identified on site and considered to be of high sensitivity include several raptors and storks, as well species which may use the nearby wetlands for breeding and wintering are: Northern Goshawk (<i>Acipiter gentilis</i>), Imperial Eagle (<i>Aquila heliaca</i>), Purple heron (<i>Ardea cinerea</i>), Booted Eagle (<i>Hieraaetus pennatus</i>), Black Stork (<i>Ciconia nigra</i>), Common buzzard (<i>Buteo buteo</i>), Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Lesser Spotted Eagle (<i>Clanga pomarina</i>), White Stork (<i>Ciconia ciconia</i>), Eurasian Kestrel (<i>Falco tinnunculus</i>), Great White Pelican (<i>Pelecanus onocrotalus</i>) Egyptian Vulture (<i>Neophron percnopterus</i>).</p> <p>VP (Vantage Point) surveys have been conducted as part of the national EIA. Additional VP surveys are planned for 2024.</p>
3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in August, September, and October 2021 for a total of 6 day/nights.</p> <p>Threatened species such as <i>Miniopterus schreibersii</i> (VU), and <i>Myotis bechsteinii</i> (VU), long-distance migrants (e.g. <i>Pipistrellus nathusii</i>) and species with high collision risk (e.g. <i>Pipistrellus</i> and <i>Nyctalus</i> sp) were recorded at the Project area.</p> <p>Additional species recorded during field surveys include common non-threatened bat species with stable populations. No CH trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review.</p>
3.4 Other faunal species	<p>During the National EIA 9 amphibian species, 25 reptile species and 29 non-volant mammals were either observed or were identified as relevant in desktop components. Vast majority of these species are common and widespread. None of them are endemic.</p> <p>Considering the characteristics and habitats present, as well as the extent of human activity in the region, the Common Tortoise (<i>Testudo graeca</i>), classified as Vulnerable (VU) and recorded in the National EIA studies, is anticipated to be the only significant species with a notable presence in the project area among those listed.</p> <p>Ottoman's Copper (<i>Lycaena ottomana</i>) is Vulnerable (VU) globally according to its arguably dated assessment in IUCN in 2000. Its habitat preference is low altitude, coastal maquis, and woodland clearings in the region, favouring wet valley floors. Its preferred host species is Rumex genus, which is widespread and common.</p>
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA	
Protected Areas	<p><u>Construction phase</u></p> <p>The Ihlamur WPP Project's Indirect Area of Influence overlaps a very small area of Kaz Mountains KBA.</p> <p>Construction activities will impact the KBA in form of increased noise levels, air pollution, vibration, invasive species, soil pollution, accidental</p>

Summary for Ihlamur Wind Power Plant	
	<p>spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance).</p> <p>The overall magnitude of the impacts is considered to be <i>minor</i>, with the impact significance being <i>moderate</i>.</p> <p><u>Operation phase</u></p> <p>During operation, impacts are primarily expected from vehicle collisions occurring during maintenance activities.</p> <p>The impact significance is considered to be <i>moderate</i>.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, • Seed collection of wildflower species should be conducted for priority biodiversity features and the seeds may be used during the restoration process.
Natural habitat	<p><u>Construction phase</u></p> <p>Construction activities will pose an impact to the natural habitats in form of habitat loss and degradation. The habitat loss and fragmentation effects are expected mainly to take place in forest areas due to opened access roads and turbine settlements.</p> <p>The magnitude of the construction impacts for terrestrial environments are <i>moderate</i> and impact significance is <i>moderate</i>.</p> <p>The magnitude of the construction impacts for aquatic environments are <i>minor</i> and impact significance is <i>moderate</i>.</p> <p><u>Operation phase</u></p> <p>Habitat fragmentation is primarily anticipated in forest areas due to the construction of access roads and turbine sites. The riparian and lotic habitats of the Gonen Stream are expected to be impacted during the OHL's operational life, mainly because of vegetation removal. This would destabilize the streambanks, increase sediment mobility, expose the area to more sunlight, and create a corridor effect. Furthermore, maintenance activities for the OHL could exacerbate these negative effects.</p> <p>The magnitude of the construction impacts s considered to be <i>moderate</i> and impact significance is <i>moderate</i>.</p> <p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora and fauna species, which would result in loss of species' populations for flora, and for fauna it would be losing areas important for their ecological functions. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites,

Summary for Ihlamur Wind Power Plant	
	<p>Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process.</p> <ul style="list-style-type: none"> A 'Landscape Plan' should be developed to restore the vegetation area.
Critical habitat	<i>Impacts on critical habitat have not been assessed.</i>
Flora	<p><u>Construction phase</u> One EN and two VU species were identified by National EIA within Project footprint. There is a possibility that habitat destruction may cause a decrease in the number of individuals of these species in the area. Addition of AIS during construction will impact native biodiversity and vegetation removal in the areas of agricultural crops and forest will lead to the permanent and temporary loss of areas of terrestrial habitat as well as loss of flora species present. However, since the affected areas in the relevant habitats will be limited. The magnitude of impact is considered to be <i>moderate</i> and impact significance is <i>moderate</i>.</p> <p><u>Operation phase</u> One EN and two VU species were identified by National EIA within Project footprint. Due to limited habitat loss, a high rate of decline in populations is not expected if the relevant species are present. The magnitude of impact is considered to be <i>minor</i> and impact significance is <i>negligible</i>.</p> <p><u>Residual Impact Significance</u> The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species. The residual impact is considered to be <i>minor</i> after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> All construction and operational working areas should be kept to a minimum to reduce habitat loss, All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process. A 'Landscape Plan' should be developed to restore the vegetation area.
Birds	<p><u>Construction phase</u> Construction activities will impact bird species through habitat loss and degradation due to vegetation clearing and rock blasting for roads, turbine pads, and the OHL route. Nest and perch structure loss will be limited to the project footprint, with significant habitat loss expected only along the OHL route where forest clearing will occur. Fragmentation and edge effects will be more pronounced along the OHL route, creating edge habitats that may attract a greater diversity of species, while interior-preferring species can use nearby forest habitats. Temporary disturbances such as pollution, light, noise, and accidental injury or death are possible. Most construction impacts will be reversible, except for the neutral edge effect. Overall, construction impacts are minor and limited, though some common breeding bird species may lose nesting sites due to tree cutting. Depending on construction timing, these birds might relocate to nearby habitats or face an unsuccessful breeding season. The magnitude of impact is considered to be <i>minor</i> and impact significance is <i>moderate</i>.</p>

Summary for Ihlamur Wind Power Plant	
	<p><u>Operation phase</u> Collision and electrocution pose significant risks to resident and migratory large soaring birds and other conservation-important species during operation. Other impacts include displacement, avoidance, and barrier effects for migrants, along with increased disturbance, pollution, and collision risk. Artificial lights can exacerbate collision risks by attracting migrating songbirds. While barrier effects are less concerning than collisions and electrocutions, they still pose a high energetic cost to migrating birds, potentially leading to death. The impact significance is <i>moderate to major</i> for highly sensitive birds.</p> <p><u>Residual Impact Significance</u> The residual impact is considered to be <i>major</i> for bird collision and electrocution mortality, and <i>minor</i> in regard to highly sensitive birds and their habitat loss after implementing and considering mitigation measures.</p> <ul style="list-style-type: none"> A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.
Bats	<p><u>Construction phase</u> Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route. The impacts to bats are considered to be temporary, although the bat species present at site are globally VU and LC species, the impact significance is considered to be <i>negligible</i>.</p> <p><u>Operation phase</u> Considering the high collision / barotrauma mortality risk and migration processes, bat species with high sensitivity were identified. Collision effect can be compounded by presence of artificial lights. It has been evaluated that operational impacts may have a major impact on these species. Other impact types during operational phase are displacement and avoidance and barrier effects (for migrants) which are usually less pronounced, however can add up in the cumulative sense. The impact significance is considered to be <i>major</i> for collision and barotrauma and <i>negligible</i> regarding habitat loss as well.</p> <p><u>Residual Impact Significance</u> The residual impact is considered to be <i>major</i>, after implementing and considering the mitigation measures:</p> <ul style="list-style-type: none"> A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.
Other faunal species	<p><u>Construction phase</u> Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through blasting and collision risks. The species identified, are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU). The impact significance is considered to be <i>minor</i>.</p> <p><u>Operation phase</u> The disturbance during operation will include vehicular traffic, and the possibility for deaths caused by traffic. Whilst the impact significances are <i>negligible</i> for mammals and herpetofauna, the impact significance considering the Common tortoise is considered to be of <i>minor</i> significance.</p>

Summary for Ihlamur Wind Power Plant	
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>negligible</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> On-site vehicle speed limits should be implemented to avoid potential road-kills. Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period.
Introduction of IAS	<p><u>Construction phase</u></p> <p>Construction impacts have not been rated.</p>
	<p><u>Operation phase</u></p> <p>Construction impacts have not been rated.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> Minimize traffic. Source goods/materials locally where possible. Invasive Species Management Plan will be developed to minimize construction and operation impacts.

15.9 UYGAR WIND POWER PLANT

Summary for Uygur Wind Power Plant		
Name	Uygur Wind Power Plant (WPP) Project	
Description	60 turbines and 252 MWm/250 MWe total installed power, a switchyard, Project roads (i.e., access and site roads) and overhead transmission line (OHL).	
Location	Balıkesir Province, Burhaniye and Savaştepe Districts, Haydar, İkizce, Büyükyenice and Taşdibi Neighborhoods; İzmir Province, Bergama District, Oruçlar, Ürkütler, Yukarıada, İneşir, Alhatlı, Durmuşlar, Çamoba and Kozluca Neighborhoods; Manisa Province, Soma District, Kiraz Neighborhood.	
Status	Not yet operational	
Available Baseline Information for Biodiversity		
1 Protected Areas	Uygur WPP is not located within a legally protected or internationally recognized area. The closest key biodiversity area (KBA), Kaz Dağları ('Kaz Mountains') MAR008, is more than 15 km away from the nearest turbine which is outside of the IAoI of the Project area.	
2 Habitat	2.1 Natural habitat	<p>Most of the project area is being located in damaged red-pine and black-pine oak habitats.</p> <p>The following EUNIS habitat types are present in the Area of Influence (AoI) according to the Critical Habitat Assessment (CHA) conducted by Mott McDonald: G4.B Mixed mediterranean pine – thermophilus oak woodland; G4.D Mixed Black pine (<i>Pinus nigra</i>) - evergreen oak woodland, G1.7 Thermophilus deciduous woodland, E4.4 Alpine and subalpine grasslands, H3.6 Weathered rock and outcrop habitats, I1.1 Intensive unmixed crops, I1.3 Arable land with unmixed crops grown by low-intensity agricultural methods, I2.2 Small-scale ornamental and domestic garden areas, J1.2 Residential buildings of villages and urban peripheries.</p>
	2.2 Critical habitat	<p>A Critical Habitat Assessment (CHA) has been conducted based on the EBRD PR6 guidelines and available information found online and in literature, with PBFs (Priority Biodiversity Features) identified based on existing information obtained largely through desktop studies.</p> <p>CHA for birds for criteria 1-3 was based on existing studies which were performed for other nearby Wind Farms and their bird surveys.</p> <p>A single bird species <i>potentially</i> triggers CH, namely Black stork (<i>Ciconia nigra</i>, nationally not evaluated, IUCN-LC).</p>

Summary for Uygur Wind Power Plant		
		<p>Bird species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> Red-footed Falcon (<i>Falco vespertinus</i>, nationally not evaluated, IUCN-LC) European Turtle-Dove (<i>Streptopelia turtur</i>, nationally VU) <p>Flora species observed during field surveys are all considered as PBF:</p> <ul style="list-style-type: none"> <i>Digitalis trojana</i> (nationally VU) <i>Cirsium balikesirense</i> (nationally VU) <p>Nine bat species observed during field surveys and considered as PBFs are the following:</p> <ul style="list-style-type: none"> Savi's Pipistrelle (<i>Hypsugo savii</i>, IUCN LC), Schreiber's Bent-winged Bat (<i>Miniopterus schreibersii</i>, IUCN VU) Long-fingered Bat (<i>Myotis capaccinii</i>, IUCN VU) Giant Noctule (<i>Nyctalus lasiopterus</i>, IUCN VU) Lesser Noctule (<i>Nyctalus leisleri</i>, IUCN LC) Noctule (<i>Nyctalus noctula</i>, IUCN LC) Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>, IUCN LC) Common Pipistrelle (<i>Pipistrellus pipistrellus</i>, IUCN LC) Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>, IUCN LC) <p>Terrestrial species observed during field surveys and considered as PBF are the following:</p> <ul style="list-style-type: none"> Common Tortoise (<i>Testudo graeca</i>, VU) Marbled Polecat (<i>Vormela peregusna</i> VU)
	2.3 Ecosystem services	No ecosystem service was pinpointed/observed during the field surveys conducted for the National EIA.
3 Species	3.1 Flora	<p>National flora surveys were conducted in June 2022, and February and March 2023, with several endemic species mainly found in forest habitats:</p> <ul style="list-style-type: none"> <i>Carlina oligocephala subsp. pallescens</i> (VU) <i>Digitalis trojana</i> (VU) <i>Stipa cacuminis</i> (VU) <i>Ferulago trojana</i> (VU) <i>Cirsium balikesirense</i> (VU) <i>Ranunculus heterorrhizus</i> (VU)
	3.2 Birds	<p>The position of the planned Uygur WPP is located close to a minor migratory route, namely the Aegean shore route. As part of the EIA monitoring studies were conducted between 6th and 13th May 2022, as well as from August to November 2021 and from March to May 2022.</p> <p>The species identified on site and considered to be of high sensitivity include several raptors and storks, as well species which may use the nearby wetlands for breeding and wintering are: Eurasian Sparrowhawk (<i>Accipiter nisus</i>), Northern Goshawk (<i>Acipiter gentilis</i>), Booted Eagle (<i>Hieraaetus pennatus</i>), Common buzzard (<i>Buteo buteo</i>), Short-toed Snake Eagle (<i>Circaetus gallicus</i>), Peregrine Falcon (<i>Falco peregrinus</i>), White Stork (<i>Ciconia ciconia</i>), Eurasian Kestrel (<i>Falco tinnunculus</i>).</p> <p>VP (Vantage Point) surveys have been conducted as part of the national EIA. Additional VP surveys are planned for 2024.</p>
	3.3 Bats	<p>As part of the National EIA biodiversity studies, bat surveys were conducted in June 2022 and May 2023 for a total of 5 day/nights.</p> <p>The following long-distance migrants (<i>Pipistrellus nathusii</i>) and species with high collision risk (<i>Pipistrellus</i> and <i>Nyctalus lasiopterus</i>) were recorded during monitoring studies. Additional species recorded during field surveys include common non-threatened bat species with stable populations. No CH</p>

Summary for Uygar Wind Power Plant	
	trigger species have been encountered on site, only their potential presence has been noted as part of desktop studies and literature review.
3.4 Other faunal species	<p>During the National EIA 8 amphibian species, 25 reptile species and 21 non-volant species were either observed or were identified as relevant in desktop components. Most of the observed species are common and widespread species with stable population numbers.</p> <p>The Common tortoise (<i>Testudo graeca</i>) VU and Marbled polecat (<i>Vormela peregusna</i>) VU were observed during the monitoring surveys conducted as part of the national EIA.</p>
Available Information on Biodiversity Risks/Impacts and Mitigation Proposed in the ESIA	
Protected Areas	Not relevant to the site. Uygar WPP is not located within a legally protected or internationally recognized area.
Natural habitat	<p><u>Construction phase</u> Construction activities will result in increased noise levels, air pollution, vibration, invasive species, soil pollution, accidental spills, wastewater, loss of ecosystem services, killing of wildlife due to car accidents, wildlife disturbance. The magnitude of the construction impacts is <i>major</i> and impact significance is <i>major</i>.</p> <p><u>Operation phase</u> During operation, impacts are primarily expected from vehicle collisions occurring during maintenance activities. The impact significance is considered to be <i>major</i>.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>moderate</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection of wildflower species should be conducted for, and priority biodiversity features and the seeds may be used during the restoration process.
Critical habitat	<i>Impacts to critical habitat not assessed.</i>
Flora	<p><u>Construction phase</u> Three VU species were identified by National EIA within Project AoI. Habitat destruction could reduce their populations. Additionally, the introduction of Invasive Alien Species (IAS) during construction may affect native biodiversity, and vegetation removal will result in both permanent and temporary loss of terrestrial habitats and flora species. The magnitude of impact is considered to be <i>moderate</i> and impact significance is <i>moderate</i>.</p> <p><u>Operation phase</u> Due to limited habitat loss, a high rate of decline in populations is not expected. The magnitude of impact is considered to be <i>minor</i> and impact significance is <i>negligible</i>.</p> <p><u>Residual Impact Significance</u></p> <p>The most significant impact of the land preparation and construction phase of the Project would be habitat loss or degradation for terrestrial flora. The Project activities is not expected to lead to a net loss or reduction in the global or national/regional population of any species.</p>

Summary for Uygur Wind Power Plant	
	<p>The residual impact is considered to be <i>minor</i> after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • All construction and operational working areas should be kept to a minimum to reduce habitat loss, • All type of impact on natural habitats outside the Project footprint should be avoided during land clearance and topsoil removal, • Boundaries of the construction areas, including traffic routes, should be limited only to designated sites, Seed collection should be conducted for critical habitat trigger species and priority biodiversity features and the seeds may be used during the restoration process. <p>A 'Landscape Plan' should be developed to restore the vegetation area.</p>
Birds	<p><u>Construction phase</u></p> <p>The impacts related to birds are considered to be temporary during construction, in terms of disturbance caused by noise, artificial lighting, presence of people, movement of vehicles and habitat loss (e.g. loss of nesting structures).</p> <p>The impact significance during construction is considered to be <i>moderate</i>.</p>
	<p><u>Operation phase</u></p> <p>Collision and electrocution pose significant risks to resident and migratory large soaring birds and other conservation-important species during operation. Other impacts include displacement, avoidance, and barrier effects for migrants, along with increased disturbance, pollution, and collision risk. Artificial lights can exacerbate collision risks by attracting migrating songbirds. While barrier effects are less concerning than collisions and electrocutions, they still pose a high energetic cost to migrating birds, potentially leading to death.</p> <p>The impact during operation is considered to be <i>major</i> for highly sensitive species and <i>moderate</i> for soaring migrants.</p>
	<p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>major</i> for bird collision and electrocution mortality, and <i>minor</i> in regard to highly sensitive birds and their habitat loss after implementing and considering mitigation measures.</p> <p>A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.</p>
Bats	<p><u>Construction phase</u></p> <p>Impacts during construction include blasting, forest clearing, air pollution, noise, those impacts are considered to be more present along the OHL route.</p> <p>The impacts to bats are considered to be temporary, although the bat species present at site are globally VU and LC species, the impact significance is considered to be <i>negligible</i>.</p>
	<p><u>Operation phase</u></p> <p>Considering the high collision / barotrauma mortality risk and migration processes, bat species with high sensitivity were identified. Collision effect can be compounded by presence of artificial lights.</p> <p>It has been evaluated that operational impacts may have a major impact on these species. Other impact types during operational phase are displacement and avoidance and barrier effects (for migrants) which are usually less pronounced, however can add up in the cumulative sense.</p> <p>The overall magnitude of impact during operation is considered to be <i>major</i> and <i>negligible</i> and impact significances are <i>major and negligible</i> as well.</p>
	<p><u>Residual Impact Significance</u></p>

Summary for Uygur Wind Power Plant	
	<p>The residual impact is considered to be <i>major</i>, after implementing and considering the mitigation measures:</p> <p>A thorough and well-structured monitoring program for birds and bats during both pre-operational and operational phases is essential to fully assess and manage the risks associated with this type of impact.</p>
Other faunal species	<p><u>Construction phase</u></p> <p>Construction activities within the Project Area of Interest (AoI) are expected to impact amphibians and reptiles primarily through blasting and collision risks.</p> <p>The species identified, are considered to have low sensitivity to these impacts, except for the common tortoise. This species has been categorized as having medium sensitivity, primarily due to its global status according to the IUCN, where it is listed as Vulnerable (VU).</p> <p>The impact significance is considered to be <i>minor</i>.</p> <p><u>Operation phase</u></p> <p>The disturbance during operation will include vehicular traffic, and the possibility for deaths caused by traffic.</p> <p>Whilst the impact significances are <i>negligible</i> for mammals and herpetofauna, the impact significance considering the Common tortoise is considered to be of <i>minor</i> significance.</p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>negligible</i>.</p> <p>All construction and operational working areas should be kept to a minimum to reduce habitat loss.</p> <ul style="list-style-type: none"> • On-site vehicle speed limits should be implemented to avoid potential road-kills. • Dust suppression measures, such as water sprays, should be implemented for reduction of dust during the working period. • Site employees should be trained to be aware of significance of habitats and species, nests of fauna species, to avoid any destruction or displacement without an expert opinion on the status of the nests. Collaborate with biodiversity experts to implement a training and awareness program.
Introduction of IAS	<p><u>Construction phase</u></p> <p><i>Construction impacts have not been rated.</i></p> <p><u>Operation phase</u></p> <p><i>Operational impacts have not been rated.</i></p> <p><u>Residual Impact Significance</u></p> <p>The residual impact is considered to be <i>minor</i>, after implementing and considering the following generic mitigation measures:</p> <ul style="list-style-type: none"> • Minimize traffic. Source goods/materials locally where possible.



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