



Dama Solar Project: Biodiversity Action Plan

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Acronyms and abbreviations

| Acronym | Definition |
|---------|---|
| AA | Appropriate/Adequate Assessment |
| ACA | Additional Conservation Action |
| AoI | Area of Influence |
| BAP | Biodiversity Action Plan |
| BBA | Baseline Biodiversity Assessment |
| BBOP | Business and Biodiversity Offsets Programme |
| BMEP | Biodiversity Monitoring and Evaluation Plan |
| BMP | Biodiversity Management Plan |
| BOMP | Biodiversity Offsets Management Plan |
| CEMP | Construction Environmental Management Plan |
| CHA | Critical Habitat Assessment |
| CIA | Cumulative Impact Assessment |
| ESIA | Environmental and Social Impact Assessment |
| GIIP | Good International Industry Practice |
| IFC PS6 | International Finance Corporation |
| IUCN | International Union for the Conservation of Nature |
| KBA | Key Biodiversity Area |
| NBSAP | National Biodiversity Strategy and Action Plan |
| NG | Net Gain |
| NGO | Non-Governmental Organization |
| NNL | No Net Loss |
| OFS | Offset Feasibility Study |
| OHTL | Overhead Transmission Line |
| PV | Photovoltaic |
| SAC | Special Areas of Conservation (Natura 200 network) |
| SCI | Sites of Community Importance (Natura 2000 network) |

| Acronym | Definition |
|---------|---|
| SPA | Special Protection Area (Natura 2000 network) |
| TBC | The Biodiversity Consultancy |
| WBG | World Bank Group |

1 Introduction

1.1 Project background

This document is the Biodiversity Action Plan (BAP) for the Dama Photovoltaic (PV) Plant (the Project), located in the Arad County in Romania (Figure 1). The Project is owned by Rezolv Energy (international investor), and it will be developed by West Power Investments s.r.l., a limited liability company incorporated under the laws of Romania. The Project aims to seek compliance with International Finance Corporation (IFC) Performance Standard 6 (PS6) and European Bank for Reconstruction and Development (EBRD) Environmental and Social Standard 6 (ESR 6) during its construction and operations phases.

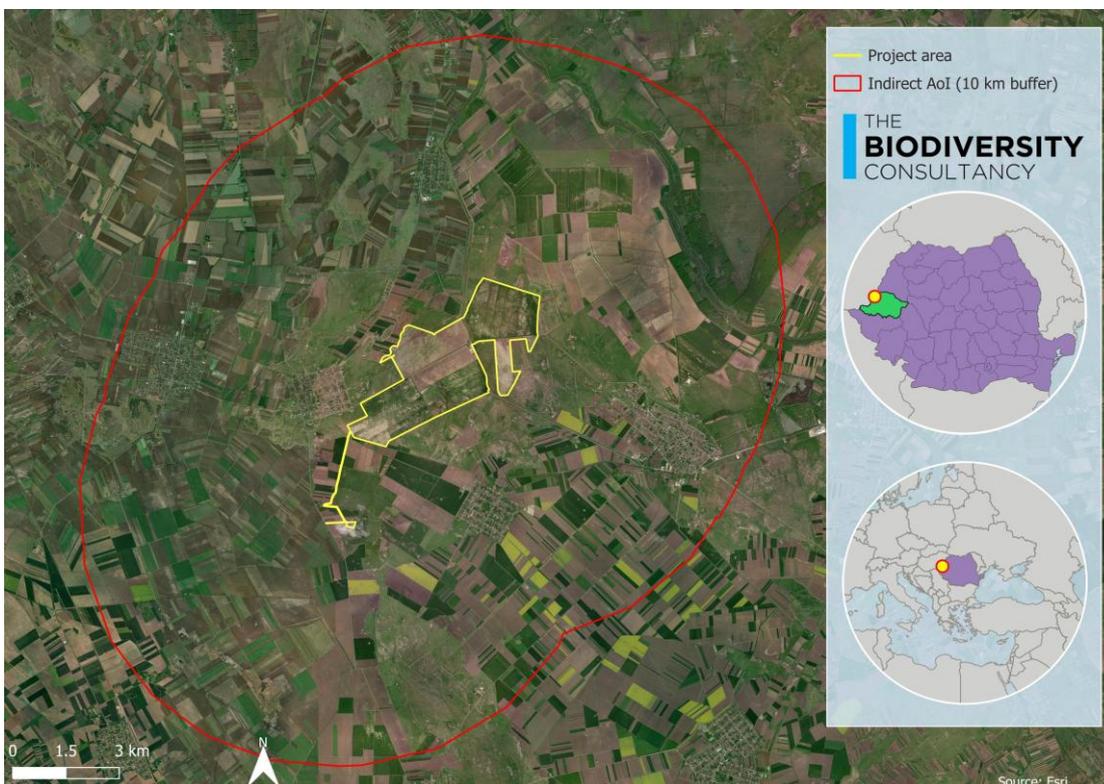


Figure 1: The location of the planned Project infrastructure (source: client-provided data).

This 1058 MW solar farm will be one of the largest solar farms in Europe, being able to power more than 350,000 households. The site overlaps with two Natura 2000 sites protected under EU Habitats (European Union 1992) and Birds Directives (European Union 2009). A brief description of the Project is provided in Section 2 below.

1.2 Purpose and objectives of the BAP

The purpose and aim of this BAP are to describe a series of actions by which the Project will demonstrate biodiversity Net Gain (NG) for Critical Habitat-qualifying features and No Net Loss (NNL) for Natural Habitat. NNL will also be demonstrated for other priority biodiversity values that do not trigger Critical Habitat. The BAP also sets out the approach for how the mitigation hierarchy will be followed, and the roles and responsibilities for Project staff and external partners.

The objectives of this BAP are to:

- Identify the priority biodiversity values in the Project area that are subject to NNL/NG targets;
- Identify and engage with key stakeholders relevant to the implementation of the BAP;
- Summarise the mitigation measures for implementation during construction and operation phases;
- Estimate residual impacts to priority biodiversity values; and,
- Set out a framework for biodiversity offsets and additional conservation actions, as well as monitoring and evaluation to enable the Project to demonstrate achievement of the NNL/NG targets.

This BAP has been prepared in-line with IFC PS6 and IFC Guidance Note 6 (IFC 2012, 2019), World Bank Group's (WBG) Environmental Health and Safety (EHS) Industry General (World Bank Group 2007a), WBG EHS Guidelines for Electric Power Transmission and Distribution (World Bank Group 2007b), Romania's National Biodiversity Strategy and Action Plan (NBSAP) (Ministry of Environment and Climate Change 2014a, 2014b)¹ and other international/ national guidance (e.g. IPIECA 2022). The NBSAP highlights infrastructure development, including renewable energy projects, as a potential threat to biodiversity. Additionally, it identifies other critical threats, such as overgrazing, the inappropriate use of non-renewable resources, and pollution, which the Project aims to address and have a positive impact.

The BAP actions are devised in-line with the mitigation hierarchy: i.e., avoid, minimise, restore and offset (CSBI & TBC 2015). Biodiversity offsetting measures are identified and developed following IFC PS6 requirements, and guidance published by the Business and Biodiversity Offsets Programme (BBOP 2012).

This BAPs is a 'living' document which is intended to be reviewed and updated as the Project implementation progresses, and as more information becomes available on the status and ecology of priority biodiversity values, the Project impacts on these values and the effectiveness of mitigation actions. This adaptive management approach will be informed by the Project's

¹ <https://biodiversity.europa.eu/countries/romania/eu-biodiversity-strategy>

Biodiversity Monitoring and Evaluation Plan (BMEP), a framework of which is included in this BAP.

1.3 Spatial and temporal scope of the BAP

The spatial (geographical) scope covered by this BAP includes (refer to Figure 1):

- Direct Area of Influence (AoI) of the Project, which is the actual Project footprint
- Indirect AoI of the Project, which extends up to 10 km from Project footprint taking into consideration the mobile species

This BAP includes actions over the proposed lifespan of the Project (i.e., 25 years), with actions ending at different times depending on the priority biodiversity feature and target.

1.4 Stakeholder engagement

To identify and implement appropriate biodiversity actions, it is important to seek advice and develop partnerships with recognised and credible conservation organisations, academic institutes, biodiversity experts and the relevant government agencies. This is especially important for projects located in Natural Habitat and Critical Habitat, or in legally protected and internationally recognised areas (IFC 2019). Engagement with government, community and any local NGO (Non-Governmental Organization) representatives early and through the Project will help ensure that potential offsets receive broad support and avoid unplanned costs or delays in progress towards NNL or NG. It will also ensure that the Project can learn and incorporate useful elements from other conservation programmes elsewhere in the region.

During the Environmental and Social Impact Assessment (ESIA), public consultation was conducted in line with regulatory requirements (ERM 2023a). Notice boards were set up in the Project area and a public debate was organized in February 2021 at Arad County Council. As per legal requirements, public consultation meetings also took place in Grăniceri and Pîlu communes. Some stakeholders raised concerns regarding the impact of the Project, which were formally answered within the regulatory consultation process facilitated by Arad Environmental Protection Agency. The Ardelene Carpathian Society² (SCA), a Romanian Non-Governmental Organization (NGO), has made legal claims against the Project, challenging the Project's environmental permit given the presence of, and likely impacts on two Natura 2000 protected

² The [Ardelene Carpathian Society \(SCA\) – Erdélyi Kárpát Egyesület \(EKE\)](#) is a long standing association, founded in Cluj in 1891, operating from 18 branches in various cities of Transylvania.

sites. The same concerns regarding Project's impacts on biodiversity were raised by the NGO Milvus Group Asociatia pentru Protectia Pasarilor (Milvus).

In support of the ESIA scoping study and in alignment with the international requirements, key stakeholders were consulted during the scoping site visit in November 2022. The ESIA was subsequently approved by the Arad Environment Protection Agency in 2023.

During the development of this BAP, biodiversity-relevant stakeholders have been identified and prioritised. Engagement with these stakeholders took place between October 2024 and January 2025 in the form of one BAP workshop in-person (December 2024), one site visit and meeting (November 2024), various virtual meetings, phone calls and emails. The concerns raised previously by the NGOs have been discussed and addressed in this BAP. In addition, Milvus Group provided comments on the Draft BAP, which have been addressed in the Final BAP (this document).

Appendix 1 presents the rationale and requirements for stakeholder engagement, the methodology and results of the stakeholder identification and prioritisation. It also includes a summary of the engagement conducted with stakeholders relevant to biodiversity, along with summary minutes for the BAP workshop and site meeting.

2 Project description

The Project is a 1058 MW dual-use solar and agricultural (sheep grazing) Photovoltaic (PV) Solar Plant, which includes an energy storage facility, as well as a ~3.6 km (mostly) underground 400 kV grid connection line. It will be one of the largest PV plants in Europe, occupying an area of approximately 1,064.5 ha. The majority of the PV plant area is arable land, resulting from a relatively recent conversion from natural grasslands which occurred between 2005 and 2012. The Project is located in Western Romania, in the North-Western area of Arad County, within the communes of Grăniceri and Pîlu. The nearest settlement to the Project is Grăniceri, 250 m west of the Project. The Project is located approximately 3.6 km east of the border with Hungary (Figure 1).

The Project includes the installation of PV modules mounted on metallic or concrete-based fixed substructures, between 1.5 m and 3.75 m above ground level. These panels will be arranged in rows 4.5 m wide with 3 m between panel rows. The PV plant will be divided in 9 Solar PV Groups, each with 24 blocks. Electrical strings will have 26 modules each (see Figure 2). There will be a 7 m-wide green belt maintained inside the Project site perimeter fence. In addition, 7 m-wide green buffers will be retained on the banks of all ditches/canals within the Project site.

During the development of this BAP (after the ESIA), the Project design evolved, and a set aside area of approximately 82 ha has been established to avoid impacts on the priority habitat and water bird habitat (see Section 6.2).

Electrical installations will consist of:

- Low voltage system (DC and AC circuits);
- AC/DC inverters (mounted under PV structures);
- Medium voltage system (LV/33 kV Transformer substations, MV underground lines and Step-up Transformer stations 33/110 kV);
- High voltage system (Main 110/400 kV Transformer Substation). Six smaller substations included in the original design are no longer required, and they have been removed from the Project site. These areas (1.36 ha each) will be managed as grassland);
- Grid Connection Substation 400 kV - to be constructed on 3.3 ha of private land owned by Graniceri Commune, and will be connected to the grid at the existing Nadab-Bekecsaba 400 kV OHTL;
- Grid connection line - this 400 kV HV grid connection line will have a length of ~3.6 km and will be installed mostly underground (with less than 50 m above ground, see Figure 3) at a depth of 1.2 m on pastureland along existing roads, railway and drainage channels crossings.

Internal Project roads will comprise newly built roads and existing dirt tracks (located along drainage channels on-site) that will be improved as needed.

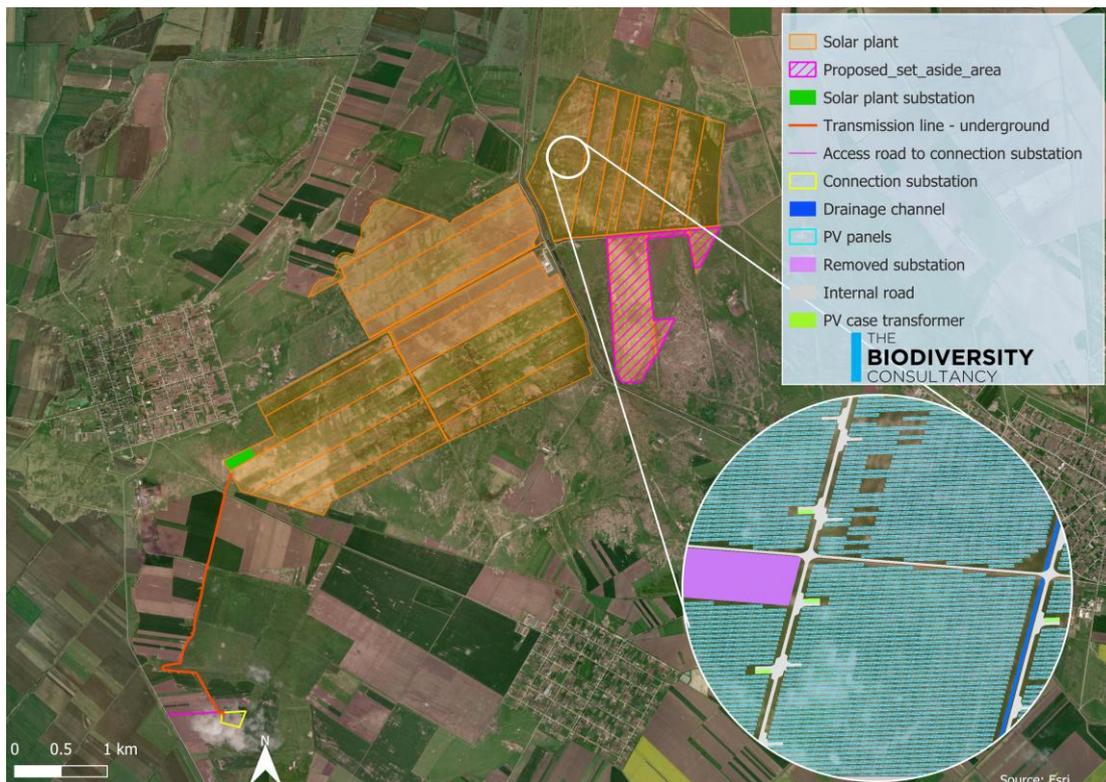


Figure 2: Close view of Project layout, with an example inset detailing Project infrastructure (source: client-provided data).

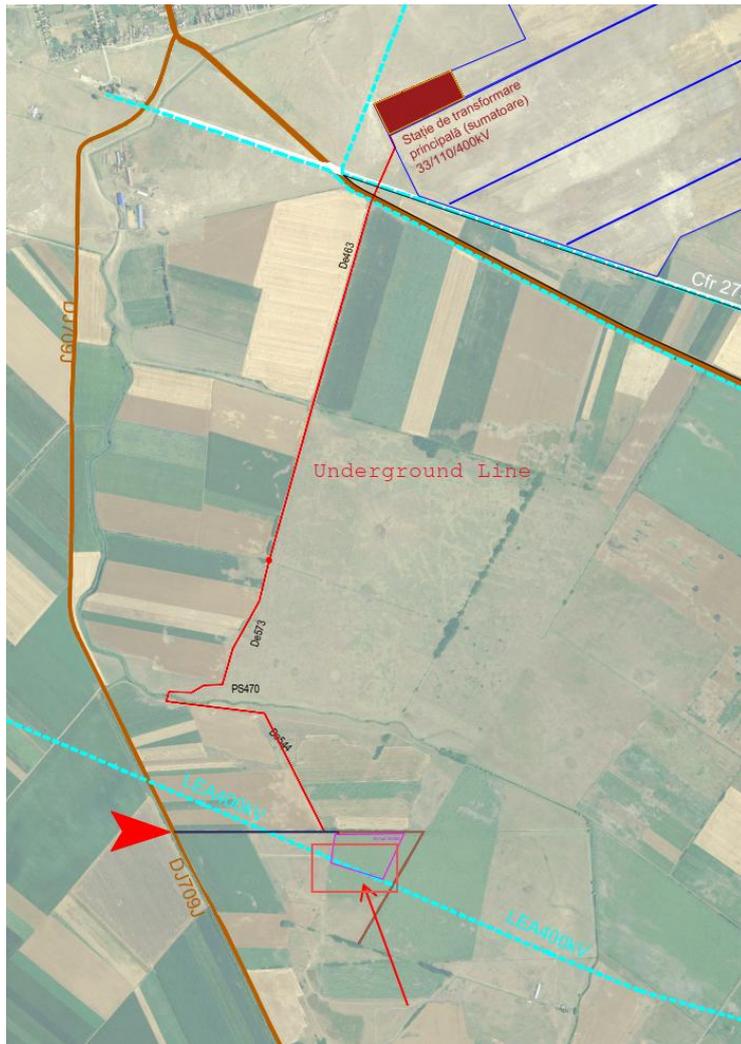


Figure 3: Location of the overhead transmission line. The transmission line connects the interconnection substation (purple polygon) with the existing transmission line (LEA 400 kV). The remaining section of the transmission line is underground (Source: Rezolv Energy)

The Project also plans to develop several facilities (the “Project Administrative Center”) within the compound of Agricola Graniceri premises for a range of activities and functions during project development.

- During construction phase, this facility will serve as:
 - Project Management Office
 - Public Information Desk
 - Education & Training Center
 - Recruiting and Hire Office
 - Press and Marketing Desk
 - Storage & Logistic Desk
- During operational phase, this facility will serve as:
 - Administration Office
 - Operations Center

- Education & Training Center
- Community Center for Public & Conferences
- Press & Marketing & Public Information Desk
- Spare parts storage area

The Project intends to adopt a dual-use land management strategy, emphasising integration of symbiotic agricultural activities on the site to increase biodiversity, through partnership with local authorities and residents. The long-term goal is to return to pasture use a large segment of the Project area. A minimum of 20% of the Project area will be maintained as green areas, which will include the buffers mentioned above, the spaces between the panel rows, and the locations of the former small substations. Vegetation management within the Project area (under and between PV panels) will be by means of sheep grazing by local farmers (ERM 2023a).

3 Legislative, regulatory, policy and lender requirements

3.1 National legislation

The Romanian institutions and legislation presented in Table 1 below are relevant to this BAP.

Table 1. National institutions and legislation relevant to the BAP.

| Institution / Legislation | Description |
|--|---|
| Ministry of Environment, Waters and Forests (Ministerul Mediului, Apelor și Pădurilor) | Ministry of Environment, Waters and Forests implements national policy in the fields of environmental protection, green economy, biodiversity, protected natural areas and climate change. They have published national guidance on the Appropriate Assessment of potential effects of projects on Natura 2000 sites and have developed management plans for Natura 2000 sites in Romania. |
| National Environment Protection Agency (Agenția Națională pentru Protecția Mediului (ANPM)) | National Environment Protection Agency (ANPM) is the regulator in terms of environmental protection, according to art. 8 of GEO 195/2005 on environmental protection approved with amendments by Law 265/2006, as amended and supplemented. |
| National Agency for Protected Natural Areas (Agenția Națională pentru Arii Naturale Protejate (ANANP)) | The National Agency for Protected Natural Areas (ANANP) was established in 2016, by Law no. 95/2016 and operates under Government Decision no. 997/2016. The purpose of ANANP is the unitary and efficient administration of protected natural areas and the conservation of Natural Habitats, flora and fauna, regulated by the provisions of Government Emergency Ordinance no. 57/2007. This agency will be integrated into a new authority designated as Agenția Națională pentru Mediu și Arii Protejate, which is expected to be established in the first quarter of 2025. |
| Law 137/1995 on Environmental Protection | The environmental legal framework in Romania contains overarching laws covering such areas as environmental protection, water, waste, nature |

| Institution / Legislation | Description |
|---|--|
| | protection, noise protection, air quality and cultural heritage, which transpose the main obligations of particular EU Directives. |
| Law 49/2011 validating the Emergency Ordinance of Government No. 57/2007 on the regime of protected natural areas, conservation of Natural Habitats, wild flora and fauna | Law on the regime of natural protected areas, the conservation of Natural Habitats, wild flora and fauna. It amends the previous comprehensive Government Emergency Ordinance 57/2007, published to fully align national legislation with that of the EU, taking into account the provisions of Directive 79/409/EEC on the conservation of wild birds and Directive 92/43/EEC on the conservation of Natural Habitats and of species of wild flora and fauna. The law establishes a national ecological network of protected areas. |
| Methodological Guide from June 14, 2023 on the appropriate assessment of the potential effects of plans or projects on protected natural areas of Community interest | This methodological guide, published by the Ministry of Environment, Waters and Forests, establishes the steps to be taken in order to carry out the Appropriate Assessment, according to the provisions of art. 28 of Government Emergency Ordinance no. 57/2007 on the regime of protected natural areas, conservation of Natural Habitats, flora and fauna. |
| Law 292/2018 on the assessment of the impact of certain public and private projects on the environment | This Law defines the EIA phase and includes procedures for the identification, assessment, and reporting of the environmental impacts of certain proposed projects and associated administrative procedures. It is aligned with the requirements of the EU EIA Directive 2014/52/EU. |
| Government Order no. 1.181 from 27 June 2016 regarding the approval of the management plan and statute of the Natura 2000 site ROSPA0015 Câmpia Crișului Alb și Crișului Negru, and associated protected areas ³ | This Order approved the management plan and statute of this Natura 2000 site, which are published in Monitorul Oficial al României, Part I, no. 808 bis from 13 October 2016. |

3.2 Corporate framework and policies

Rezolv Energy has a sustainability strategy that is built on industry best practice and adheres to international standards, including the Equator Principles and the IFC's Environmental and Social Performance Standards. Rezolv Energy has developed a Group Nature Strategy that commits to achieving no net loss (NNL) of biodiversity, and explore opportunities to deliver nature positive outcomes for biodiversity during the lifecycle of their projects⁴.

³ <https://legislatie.just.ro/Public/DetaliiDocument/182525>

⁴ <https://rezolv.energy/sustainability/>

3.3 Lender requirements

The Project intends to align with IFC PS6 (IFC 2012, 2019), EBRD ESR6 (EBRD 2025) and other good international industry practice (GIIP) guidance.

The objectives of IFC PS6 are to protect and conserve biodiversity, maintain benefits from ecosystem services and promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities. IFC PS6 requirements depend on the classification of Project area in three classes based on condition and significance for biodiversity. These three classes are:

- Modified Habitat
- Natural Habitat
- Critical Habitat

IFC PS6 defines Natural Habitats as “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”. Monoculture plantations, intensive agricultural areas and urban areas show substantial modification and are classified as Modified Habitat.

Areas of “high biodiversity value” are termed Critical Habitat by IFC. Such a designation is based on the presence and/or quantity of significant types of biodiversity (e.g. threatened species, highly threatened ecosystems etc) and is independent of the condition of the habitat.

The criteria for the definition of Critical Habitat according to IFC PS6 (IFC 2019) are summarised in Table 2. In addition, IFC PS6 states that certain internationally recognised areas of high biodiversity value are likely to be classified as Critical Habitat.

IFC PS6 compliant projects must achieve ‘no net loss’ for Natural Habitats and net gain’ for Critical Habitat values. IFC PS6 also requires projects in Protected Areas and internationally recognized areas to be developed in line with any government recognized management plans, be legally permitted, and implement additional programs to promote and enhance the conservation aims and effective management of the area.

In addition to IFC PS6, this BAP considers the Critical Habitat and Priority Biodiversity Features (PBF) as defined by the EBRD in its ESR6). The criteria for defining Critical Habitat under IFC PS6 are slightly different to the criteria under EBRD ESR6 (EBRD 2025). For example, ESR6 includes habitats listed under Annex I of the EU Habitats Directive (European Union 1992) or Resolution 4 of the Bern Convention (Council of Europe 1979), whereas IFC PS6 does not (IFC 2019).

Table 2. Summary of IFC PS6 Critical Habitat criteria.

| Criteria | Nature of thresholds | Units |
|---|----------------------|--|
| Criterion 1 (C1): Critically Endangered and Endangered species | Quantitative | Percentages of global and national population sizes combined with – whenever available - minimum numbers of reproductive units ⁵ |
| Criterion 2 (C2): Restricted-range species | | |
| Criterion 3 (C3): Migratory/congregatory species | | |
| Criterion 4 (C4): Highly threatened and/or unique ecosystems | | Percentage of global extent |
| Criterion 5 (C5): Key Evolutionary Processes | Qualitative | Presence of landscapes with high spatial heterogeneity, environmental gradients and features of demonstrated importance to climate change adaptation |

4 Biodiversity context

The Project area is located within the Pannonia-Mixed Forests ecoregion. This ecoregion consists of the depression surrounded by the Carpathian Mountains, Alps and Dinaric Mountains. Previously, it was dominated by oak forests, steppes and lakes, which have been modified by centuries of non-intensive grazing and cultivation⁶. Despite this significant human influence, the region still harbours important wildlife, including diverse avifauna which is reflected in the 50 Important Bird and Biodiversity Areas (IBAs) located in the ecoregion. Several threatened species of mammals, reptiles and amphibians are also present.

Most of the Project footprint and adjacent surrounding areas are composed of Modified Habitats, primarily cultivated fields and pastures. The site has been extensively drained through the construction of a number of artificial agricultural drainage canals. No natural rivers/streams remain on the site. However, there are a few highly fragmented patches of secondary and degraded steppe/grassland (ERM 2023a). A site visit showed the Project site to be flat and crossed by a network of ditches, the majority of which support water and wetland vegetation.

⁵ The IUCN KBA Standard uses the following definition for *reproductive unit*: “the minimum number and combination of mature individuals necessary to trigger a successful reproductive event at a site (Eisenberg 1977). Examples of five reproductive units include five pairs, five reproducing females in one harem, and five reproductive individuals of a plant species.”

⁶ [Pannonian Mixed Forests | One Earth](#)

Several plots within the Project site have been ploughed without cultivation in recent years, with the remaining plots being used for sheep grazing.

The characteristic habitat for the Project area is **Pannonic salt steppes and salt marshes**, which is an EU priority habitat type (1530*) listed in Annex I of the Habitats Directive (European Union 1992) and classified as Vulnerable according to the EU Red List of Habitats (European Commission 2016). Further discussion of this habitat is presented in Section 4.2.1 below.

In addition, several species present in the Project area qualify as Priority Biodiversity Features (PBF) according to EBRD ESR6 (EBRD 2025). These include globally threatened birds that are listed in the EU Habitats and/or Birds Directives, such as Red-breasted Goose (*Branta ruficollis*) (VU), Eastern Imperial Eagle (*Aquila heliaca*) (VU), Saker Falcon (*Falco cherrug*) (EN), Red-footed Falcon (*Falco vespertinus*) (EN), and also two globally threatened mammals - European Souslik (*Spermophilus citellus*) (EN) and Schreiber's Bent-winged Bat (*Miniopterus schreibersii*) (VU). An additional 45 fauna species (NT, LC, DD) also qualify as PBF based on their listing in Annex II of the EU Habitats Directive and/or Annex I of the EU Birds Directive (35 birds, 2 mammals, 4 amphibians, 2 reptiles, 2 invertebrates).

The Project site overlaps with two Natura 2000 sites protected under EU Habitats Directive⁷ (European Union 1992) and Birds Directive⁸ (European Union 2009):

- **Câmpia Crișului Alb și Crișului Negru** Special Protection Area (SPA) (ROSPA0015) designated under the Birds Directive, as it protects 145 species of birds from the European Union (EU) Nature Directives. This area is also recognised as a Key Biodiversity Area⁹ (KBA) and as an Important Bird Area¹⁰ (IBA).
- **Nădab - Socodor – Vârșad** Site of Community Importance (SCI) (ROSCI0231) designated under the EU Habitats Directive, as it protects a EU priority habitat type (Annex I of the Directive): 1530 'Pannonic salt steppes and marshes'.

The Project site also overlaps with the Câmpia Crișurilor Key Biodiversity Area. See Section 4.2.4 for further information on these sites.

⁷ [Council Directive 92/43/EEC of May 1992 on the conservation of natural habitats and of wild fauna and flora](#)

⁸ [Directive 2009/147/EC of the European Parliament and the Council of 30 November 2009 on the conservation of wild birds](#)

⁹ <https://www.keybiodiversityareas.org/site/factsheet/24357>

¹⁰ <https://datazone.birdlife.org/site/factsheet/c%C3%A2mpia-cri%C5%9Furilor-iba-romania>

4.1 Baseline and monitoring studies

Flora and fauna surveys have been carried out as part of the ESIA for the Project (ERM 2023b), with an additional vegetation survey completed in 2024 (ERM 2024). In addition, a one year monitoring programme is being conducted for several species groups (Galan & Sandu 2024). A summary of all biodiversity surveys and monitoring conducted to date in the Project area is presented in Table 3.

Table 3. Biodiversity surveys and monitoring conducted in the Project area.

| Biodiversity group | Methods | Area | Sampling period | Context (source) |
|----------------------|--|---------------------------------------|--|----------------------------------|
| Flora and vegetation | <ul style="list-style-type: none"> Transects and plots | Project direct Aol | 2021 (unknown date) 30-31 May 2024 22-23 Sept 2024 28-31 Jul 2024 | ERM 2023b Galan & Sandu 2024 |
| Flora and vegetation | <ul style="list-style-type: none"> Transects and plots with remote sensing (drone imagery) | Project direct Aol, transmission line | 14-15 Sept 2024 | ERM 2024 |
| Birds | <ul style="list-style-type: none"> Migratory species: vantage points Nesting passerines: points Nocturnal birds: points Nesting raptors: transects Wintering birds: transects | Project direct Aol | May-Jul 2021 Nov-Feb 2021 30-31 May 2024 19 June 2024 22-24 June 2024 27-31 July 2024 10-11 Aug 2024 | ERM 2023b Galan & Sandu 2024) |
| Non-flying mammals | <ul style="list-style-type: none"> Direct observation, trapping and camera traps Fixed point and drone surveys | Project direct Aol | 2021 unknown date 30-31 May 2024 22-23 June 2024 28-31 July 2024 10-11 Aug 2024 | ERM 2023b Galan & Sandu 2024) |
| Bats | <ul style="list-style-type: none"> Static acoustic detection with automatic and manual detectors | Project direct Aol | 2021 unknown date 22-23 June 2024 27-28 July 2024 10-11 Aug 2024 | ERM 2023b Galan & Sandu 2024 |
| Herpetofauna | <ul style="list-style-type: none"> Transects | Project direct Aol | 2021 unknown date 30-31 May 2024 22-23 Sept 2024 28-31 July 2024 | ERM 2023b Galan & Sandu 2024) |

| Biodiversity group | Methods | Area | Sampling period | Context (source) |
|--------------------|---|--------------------|---|---------------------------------|
| | | | 10-11 Aug 2024 | |
| Invertebrates | <ul style="list-style-type: none"> Transects | Project direct AoI | 2021 unknown date 30-31 May 2024 22-23 June 2024 28-31 July 2024 | ERM 2023b Galan & Sandu 2024 |

4.2 Priority biodiversity values

This BAP focuses on habitats and species that require special management measures rather than all biodiversity. This section confirms the priority biodiversity values for the Project to which the goals of No Net Loss or Net Gain apply.

The priority biodiversity values for this BAP include habitats and species of conservation importance/protected status, and which are likely to be affected by the Project (confirmed or likely to occur in the Direct Area of Influence of the Project). Presence and abundance of the relevant species in the Project Area of Influence (AoI) was obtained from the results of baseline surveys and ongoing monitoring (see Table 3), and from secondary sources such as eBird¹¹ and Open Bird Maps¹².

The following categories of biodiversity values are priorities in this BAP:

- Critical Habitats, Natural Habitats and threatened ecosystems, including those which are listed in Annex I of the EU Habitats Directive and which are qualifying features of the SCI (Natura 2000) overlapping with the Project; corresponding to the **Pannonic salt steppes and salt marshes** which are **Natural Habitat** and qualify as **Critical Habitat** (ERM 2023c), requiring **Net Gain** (see Section 4.2.1).
- Bird Priority Biodiversity Features (PBFs), i.e. bird species listed in Annex I of the EU Birds Directive, which are qualifying features of the SPA (Natura 2000) and IBA/KBA overlapping with the Project, and other threatened bird species; corresponding to **54 bird PBFs** that require **No Net Loss** (Table 5) (see Section 4.2.2).
- Non-bird PBFs, i.e. non-bird species listed in Annex II and IV of the EU Habitats Directive and other threatened species; corresponding to **five mammal, two reptile, two amphibian and one plant PBFs** that require **No Net Loss** (Table 6) (see Section 0).

¹¹ <https://ebird.org/>

¹² Open Bird Maps (<https://openbirdmaps.ro/>) is an open access database dedicated to collecting and freely publishing information regarding the spatial and temporal distribution of wild birds in Romania. Its aim is to ensure free access to raw data collected by amateur or professional ornithologists.

- Legally protected areas and internationally protected areas

The following sections provide a summary of these biodiversity priorities.

It should be noted that this BAP should be updated in line with the findings of the revised CHA (TLCommunications 2026) that has been updated in response to the updated EBRD ESR6 and Guidance Note (EBRD 2025). The new CHA identifies a number of additional plant and fauna species - particularly avifauna - that qualify as Priority Biodiversity Features (PBFs). However, it is considered highly unlikely that the identification of these additional PBFs will necessitate the definition of new offset measures beyond those already included in this BAP (e.g. installation of artificial nest boxes and tree planting to provide potential nesting habitats), given the diversity and broad ecological scope of the measures already proposed (see Section 8.3.2). The updated BAP should explicitly link any newly identified PBFs subject to residual impacts to the existing offset measures presented here.

4.2.1 Critical Habitats, Natural Habitats and threatened ecosystems

The Pannonic salt steppes and salt marshes qualifies as Natural Habitat under IFC PS6, and also as Critical Habitat under EBRD ESR6. Net Gain of this habitat is required.

The Pannonic salt steppes and salt marshes was identified as a threatened ecosystem in the CHA (ERM 2023c), as it is listed as VU under the EU Red List of Habitats (European Commission 2016). It is also listed under Annexe I of the EU Habitats Directive where it is marked as a 'priority habitat type' (European Union 1992) and listed in Resolution 4 of the Bern Convention (Council of Europe 1979).

Pannonic salt steppes and salt marshes are influenced by the Pannonic climate with extreme temperatures and aridity in summer, and the enrichment of salt in the soil is due to high evaporation of ground water during summer. This habitat type occurs mainly in Hungary, with edges of its distribution in Austria, Slovakia, Romania and Bulgaria (Šefferoová et al. 2008). This ecosystem is threatened in Europe mainly due to conversion to agriculture and overgrazing, with other threats including abandonment of traditional land management, hunting, eutrophication, lowering of water table connected with river regulations and building of canals, introduction of alien plants and climate change¹³.

This Natural Habitat does not qualify as Critical Habitat under IFC PS6, as it is listed as Vulnerable (VU) (not Endangered EN or Critical CR) under the EU Red List of Habitats (European Commission 2016; IFC 2019). However, the Pannonic salt steppes and salt marshes qualifies as Critical Habitat under Criterion i(a) of EBRD ESR6, as it is a 'priority' habitat type listed in Annexe I of the EU Habitats Directive (European Union 1992). The extent of this habitat in the vicinity of the Project area was mapped and ground-truthed in October 2024 (ERM 2024).

¹³ <https://biodiversity.europa.eu/habitats/1530>

A small amount of Pannonic salt steppes and salt marshes occurs in the Project area. This has been calculated to be 17.33 ha (c. 1.62% of the Project area) (see Table 15) based on the ground-truthed habitat map (Figure 13) in the residual impact assessment (Section 7.3). The ESA WorldCover 2021 10m data, without ground-truthing, overestimates the area of natural grasslands within the Project area (refer to Table 4 and Figure 4). This Natural Habitat is more extensive immediately outside the Project area. The Pannonic salt steppes and salt marshes in the wider area of the Project experience a moderate to high level of livestock grazing. While livestock grazing has likely altered the plant species composition to some extent, the dominant plant species are still representative of Pannonic salt steppes and salt marshes (ERM 2024).

Within the Project area, Modified Habitat covers 98.38% (Table 15) and includes mostly recently ploughed and abandoned arable fields. Most of the Project area appears to have been ploughed for at least a decade, with plough marks visible on Google Earth imagery from at least 2013. Information provided by local stakeholders (refer to Appendix 1) and as stated in the environmental permit, the Project area has been subjected to ploughing since 2005. Some of the Project area had been partially ploughed when the Natura 2000 sites were designated (the first version of ROSPA0015 was declared part of the Natura 2000 network in 2007) while other sections were converted after the designation of the protected areas. Other Modified Habitats in the Project area include artificial canals/agricultural drains, roads, and a few buildings which are the offices of Agricola Graniceri.

Table 4 and Figure 4 provide an overview of the habitats present in the BAP study area and their status as either Natural or Modified Habitat. This information is to illustrate the habitats available for the priority species in the BAP study area and Project Aol. The calculation of the actual habitat losses likely to be caused by the Project is presented in the residual impact assessment below (Section 7; Table 15).

Table 4. Land cover types (European Space Agency (ESA) WorldCover 2021) classification as Natural Habitat (NH) or Modified Habitat (MH), and their occupation within 10 km buffer around the Project.

| Type name | NH/MH | Modelled area in 10 km buffer (ha) | % of buffer | Modelled area in Project area (ha) | % of Project area | Modelled area in Project area + 10 km buffer (ha) | % of Project area + 10 km buffer |
|--------------------------|-------|------------------------------------|-------------|------------------------------------|-------------------|---|----------------------------------|
| Tree cover | NH/MH | 1,257.0 | 4.3% | 0.1 | 0.0% | 1,257.1 | 4.2% |
| Shrubland | NH/MH | 0.1 | 0.0% | - | - | 0.1 | 0.0% |
| Grassland | NH | 8,475.0 | 29.3% | 96.2 ¹⁴ | 8.6% | 8,571.2 | 28.5% |
| Cropland | MH | 18,648.3 | 64.4% | 1018.1 | 91.2% | 19,666.4 | 65.4% |
| Built-up | MH | 443.4 | 1.5% | 2.4 | 0.2% | 445.8 | 1.5% |
| Bare / sparse vegetation | MH | 2.1 | 0.0% | - | - | 2.1 | 0.0% |
| Permanent water bodies | NH/MH | 65.6 | 0.2% | - | - | 65.6 | 0.2% |
| Herbaceous wetland | NH | 48.0 | 0.2% | 0.1 | 0.0% | 48.1 | 0.2% |
| Total area | - | 31,173.3 | - | 1,116.9 | - | 30,056.4 | - |

¹⁴ ESA WorldCover 2021 10m data overestimates the area of natural grasslands within the Project area. Data from on-ground field surveys is more accurate than remote sensing data from ESA WorldCover.

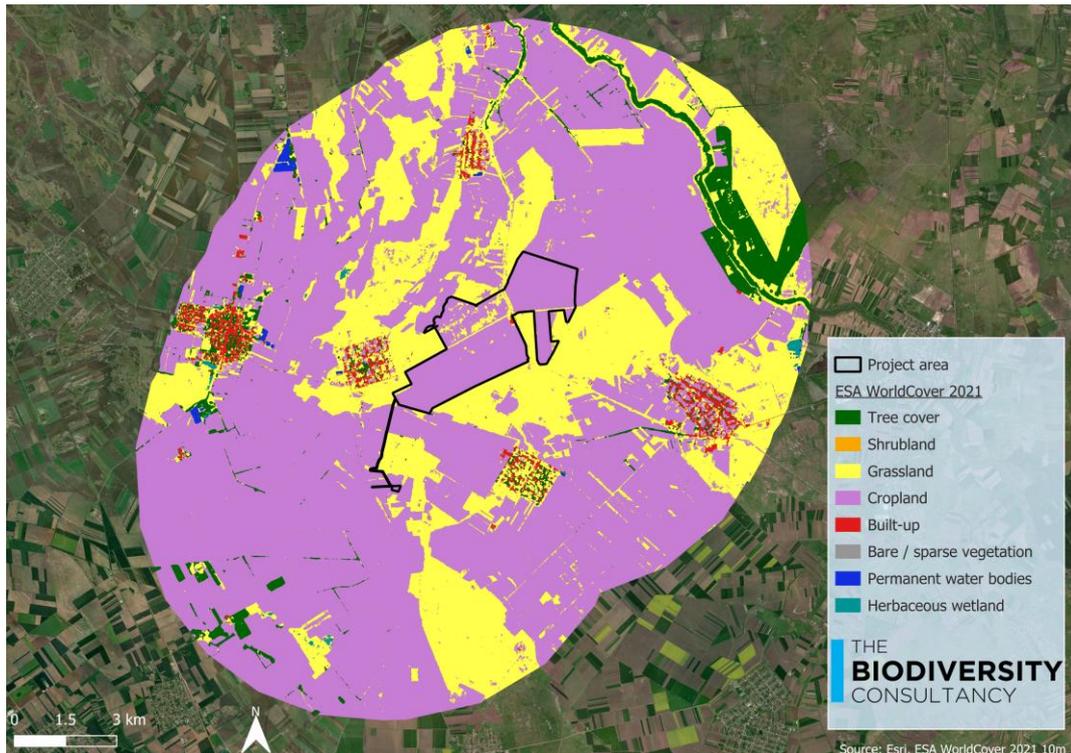


Figure 4: Modelled land cover types within 10 km buffer around Project (source: ESA WorldCover 2021 10m), to provide an indication of habitats available for key species in the region. Note that it is not ground-truthed. For a ground-truthed habitat map of the Project area refer to Figure 13 and Table 15 in the residual impact assessment section below.

4.2.2 Bird species listed in Annex I of the EU Birds Directive and other threatened birds

Species for which the IFC PS6 critical habitat criteria are triggered are usually considered the main priority for projects. However, the Critical Habitat Assessment for this Project found no species that would trigger Critical Habitat in the Project's Ecologically Appropriate Area of Analysis (ERM 2023c). Bird species which are qualifying features of the SPA (Natura 2000) and IBA/KBA overlapping the Project (whose populations meet IBA/KBA criteria) and/or are listed in Annex I of the Birds Directive and whose presence in the Project area has been confirmed or is considered likely are classified as PBFs under EBRD ESR6 and are considered priorities in this BAP.

Table 5 lists all the **54 bird PBFs** that **are considered priority for the purpose of this BAP** (including all criteria) **and require No Net Loss**.

Turtle Dove *Streptopelia turtur* is considered priority because it is classified as Vulnerable under the IUCN Red List (see Table 5).

Table 5: Bird species listed in Annex I of the EU Birds Directive which are qualifying features of the Câmpia Crișului Alb și Crișului Negru SPA and/or IBA qualifying species, whose presence in the Project area has been confirmed or is considered likely, with indication of IUCN Red List global conservation status and Romanian Red List conservation.

| Common name | Scientific name | IUCN | Romania | Present in SPA | Qualifying IBA/KBA |
|----------------------------|------------------------------|------|---------|----------------|--------------------|
| Barred Warbler | <i>Sylvia nisoria</i> | LC | LC | ✓ | |
| Black Kite | <i>Milvus migrans</i> | LC | CR | ✓ | |
| Black Stork | <i>Ciconia nigra</i> | LC | LC | ✓ | |
| Black Tern | <i>Chlidonias niger</i> | LC | VU | ✓ | |
| Black-crowned Night-heron | <i>Nycticorax nycticorax</i> | LC | LC | ✓ | |
| Black-headed Gull | <i>Larus ridibundus</i> | LC | LC | | ✓ |
| Black-tailed Godwit | <i>Limosa limosa</i> | NT | VU | | ✓ |
| Black-winged Stilt | <i>Himantopus himantopus</i> | LC | LC | ✓ | |
| Bluethroat | <i>Luscinia svecica</i> | LC | NT | ✓ | |
| Booted Eagle | <i>Hieraaetus pennatus</i> | LC | NT | ✓ | |
| Common Crane | <i>Grus grus</i> | LC | RE | ✓ | ✓ |
| Common Kingfisher | <i>Alcedo atthis</i> | LC | LC | ✓ | |
| Common Little Bittern | <i>Ixobrychus minutus</i> | LC | NT | ✓ | |
| Eastern Imperial Eagle | <i>Aquila heliaca</i> | VU | CR | ✓ | |
| Eurasian Bittern | <i>Botaurus stellaris</i> | LC | LC | ✓ | |
| Eurasian Golden Plover | <i>Pluvialis apricaria</i> | LC | NE | ✓ | ✓ |
| Eurasian Honey-buzzard | <i>Pernis apivorus</i> | LC | LC | ✓ | |
| Eurasian Spoonbill | <i>Platalea leucorodia</i> | LC | NT | ✓ | |
| European Roller | <i>Coracias garrulus</i> | LC | LC | ✓ | ✓ |
| Ferruginous Duck | <i>Aythya nyroca</i> | NT | LC | ✓ | |
| Glossy Ibis | <i>Plegadis falcinellus</i> | LC | NT | ✓ | |
| Great White Egret | <i>Ardea alba</i> | LC | LC | ✓ | |
| Greater Spotted Eagle | <i>Clanga clanga</i> | VU | EN | ✓ | |
| Grey Heron | <i>Ardea cinerea</i> | LC | LC | | ✓ |
| Hen Harrier | <i>Circus cyaneus</i> | LC | LC | ✓ | |
| Lesser Grey Shrike | <i>Lanius minor</i> | LC | VU | ✓ | ✓ |
| Lesser Spotted Eagle | <i>Clanga pomarina</i> | LC | NT | ✓ | |
| Lesser White-fronted Goose | <i>Anser erythropus</i> | VU | CR | ✓ | |
| Little Egret | <i>Egretta garzetta</i> | LC | LC | ✓ | |
| Long-legged Buzzard | <i>Buteo rufinus</i> | LC | LC | ✓ | |
| Merlin | <i>Falco columbarius</i> | LC | NE | ✓ | |
| Montagu's Harrier | <i>Circus pygargus</i> | LC | VU | ✓ | ✓ |
| Osprey | <i>Pandion haliaetus</i> | LC | NE | ✓ | |
| Pallid Harrier | <i>Circus macrourus</i> | NT | RE | ✓ | |
| Peregrine Falcon | <i>Falco peregrinus</i> | LC | LC | ✓ | |

| Common name | Scientific name | IUCN | Romania | Present in SPA | Qualifying IBA/KBA |
|------------------------|-------------------------------|------|---------|----------------|--------------------|
| Pied Avocet | <i>Recurvirostra avosetta</i> | LC | LC | ✓ | |
| Purple Heron | <i>Ardea purpurea</i> | LC | LC | ✓ | ✓ |
| Pygmy Cormorant | <i>Microcarbo pygmaeus</i> | LC | LC | ✓ | |
| Red-backed Shrike | <i>Lanius collurio</i> | LC | LC | ✓ | |
| Red-breasted Goose | <i>Branta ruficollis</i> | VU | VU | ✓ | |
| Red-footed Falcon | <i>Falco tinnunculus</i> | EN | VU | ✓ | ✓ |
| Ruff | <i>Calidris pugnax</i> | LC | NE | ✓ | ✓ |
| Saker Falcon | <i>Falco cherrug</i> | EN | EN | ✓ | |
| Short-eared Owl | <i>Asio flammeus</i> | LC | EN | ✓ | |
| Short-toed Snake-eagle | <i>Circaetus gallicus</i> | LC | LC | ✓ | |
| Squacco Heron | <i>Ardeola ralloides</i> | LC | LC | ✓ | |
| Tawny Pipit | <i>Anthus campestris</i> | LC | LC | ✓ | |
| Turtle Dove | <i>Streptopelia turtur</i> | VU | LC | | |
| Western Marsh-Harrier | <i>Circus aeruginosus</i> | LC | LC | ✓ | ✓ |
| Whimbrel | <i>Numenius phaeopus</i> | LC | NE | | ✓ |
| Whiskered Tern | <i>Chlidonias hybrida</i> | LC | LC | ✓ | |
| White Stork | <i>Ciconia ciconia</i> | LC | LC | ✓ | |
| White-tailed Sea-eagle | <i>Haliaeetus albicilla</i> | LC | VU | ✓ | |
| Wood Sandpiper | <i>Tringa glareola</i> | LC | NE | ✓ | ✓ |

4.2.3 Non-bird species listed in Annex II and IV of the EU Habitats Directive and other threatened species

Eight non-bird animal species (five mammals, two reptiles and two amphibians) and one plant species also qualify as PBFs under EBRD ESR6 and are considered priority species for the Project, requiring No Net Loss, because they are either protected under Annex II of the EU Habitats Directive or are globally or nationally threatened. These species are listed in Table 6.

Table 6: Non-bird species listed in Annex II and IV of the EU Habitats Directive, showing which are qualifying features of the Natura 2000 site, with indication of IUCN Red List global conservation status and Romanian Red List conservation status.

| Common name | Scientific name | IUCN | Romania | Qualifying SIC |
|-----------------------------|---------------------------------|------|---------|----------------|
| Mammals | | | | |
| Common noctule | <i>Nyctalus noctula</i> | LC | - | Annex IV |
| Schreiber's Bent-winged Bat | <i>Miniopterus schreibersii</i> | VU | - | Annex II, IV |
| Pond Bat | <i>Myotis dasycneme</i> | NT | - | Annex II, IV |
| European Souslik | <i>Spermophilus citellus</i> | EN | - | Annex II, IV |
| Eurasian Otter | <i>Lutra lutra</i> | NT | - | Annex II, IV |
| Reptiles | | | | |
| European Pond Turtle | <i>Emys orbicularis</i> | NT | - | Annex II |
| Amphibians | | | | |
| European Fire-bellied Toad | <i>Bombina bombina</i> | LC | - | Annex II, IV |
| European Tree-frog | <i>Hyla arborea</i> | LC | - | Annex IV |
| Plants | | | | |
| Water Shamrock | <i>Marsilea quadrifolia</i> | VU | VU | Annex II, IV |

4.2.4 Legally protected and internationally recognised areas

The Project overlaps two Natura 2000 designated sites¹⁵, the Câmpia Crişului Alb și Crişului Negru Special Protection Area (SPA) and the Nădab - Socodor – Vârşad Site of Community Importance (SCI), along with one KBA¹⁶, the Câmpia Crişurilor Key Biodiversity Area and Important Bird Area (Figure 5). These are briefly described below. The Project's impacts on the bird and habitat qualifying features of these sites are assessed in Section 7.2 and Section 7.3.

Additionally, the Gyula-szabadkígyósi gyepék Special Area of Conservation (SAC) and the Crişul Alb SAC are located 3.5 km northwest and 3.7 km east of the Project area respectively (Figure 5). However, neither of these SACs are likely to be impacted by the Project, and they are not discussed further in this BAP.

¹⁵ [Natura 2000 data – the European network of protected sites](#)

¹⁶ <https://www.keybiodiversityareas.org/sites/search>

4.2.4.1 **Câmpia Crișului Alb și Crișului Negru** Special Protection Area (SPA) (ROSPA0015)

This SPA has been designated since 2007 under the EU Birds Directive, as it protects 145 species of birds from the European Union (EU) Nature Directives¹⁷. The site is particularly important for waterfowl and forest-steppe birds. During the migration period, the ponds and wet fields host between 78,000 and 110,000 waterfowl in a season (EEA 2019). The EN Saker Falcon (*Falco cherrug*), the VU Eastern Imperial Eagle (*Aquila heliaca*) and the VU Red-breasted Goose (*Branta ruficollis*) are also present at this site (ERM 2023c). The SPA, which is composed of two separate sites, has an area of 392 km² and is located in the catchment area of the Crișului Alb and Crișului Negru rivers. Land cover in the SPA consists primarily of grasslands and pastures. Forest-steppe vegetation dominates, with aquatic, marsh and halophilic vegetation in the lowlands and oak forests in the highlands (Ministerul Mediului, Apelor și Pădurilor 2016). The lowlands (plains) are crossed by the Crișului Alb and Crișului Negru rivers and a number of canals. In addition to agricultural land, this area contains wetlands, ponds, extensive fields with grassy vegetation and forests. Despite the significant anthropogenic impact in the site (deforestation, transformation of meadows into agricultural land etc.), due to the diversity of habitats, the biodiversity is described as very high (EEA 2019). The site does not have a IUCN management category and it is designated at a regional level. The management authority is the Agenția Națională pentru Arii Naturale Protejate¹⁸. The SPA overlaps with the entirety of the Project area, although the connection substation and approximately 1.4 km of the transmission line and access road are outside the SPA (Figure 5).

An integrated management plan for Câmpia Crișului Alb și Crișului Negru SPA, Nădab - Socodor – Vârșad SCI and other neighbouring Natura 2000 sites (Crișuri Protected Areas Complex) was published in 2016 (Ministerul Mediului, Apelor și Pădurilor 2016). The overall objective of this plan is to establish a regulatory framework for maintaining or improving the conservation status over a five-year period for 7 habitats and 86 species of Community and national importance and 86 species of regularly migrating birds, which constitute conservation objectives for the Crișuri Protected Areas Complex. The specific objectives are:

- 1: Implementation of an efficient system for managing the administrative issues of the Crișuri Protected Areas Complex over a period of five years.
- 2: Establishment of measures to maintain or improve the conservation status over a period of five years for 86 species and 7 habitats of Community and national importance, which constitute conservation objectives for the Crișuri Protected Areas Complex.
- 3: Establishing the necessary measures over a period of five years to contribute to improving living conditions, from the perspective of the natural environment and the sustainable use of

¹⁷ <https://eunis.eea.europa.eu/sites/ROSPA0015>

¹⁸ <https://www.protectedplanet.net/555540940>

natural and traditional cultural resources of local communities within the Crişuri Protected Areas Complex and its vicinity.

4: Organizing, over a period of five years, the activities necessary to improve information, raise public awareness, and training of specialists regarding the 7 habitats and 86 species of Community importance and 86 species of regularly migrating birds on the territory of the Crişuri Protected Area Complex, which will be made available to the 16 local communities in order to contribute to their sustainable development. The integrated management plan includes a wide range of activities as follows:

- Identification and mapping of species of Community interest
- Monitoring the conservation status of species and habitats
- Control of invasive species
- Regulation of the period during which grazing is permitted and its intensity in habitat area 6430
- Limitation and control of anthropogenic activities in the specific habitat area of mammal species: anthropization, motorized traffic, pollution, road construction, poaching
- Prohibition of fire and chemicals
- Prohibition of the use of chemicals on arable land within and in the vicinity of the site
- Strict control of poaching activities
- Establishment and maintenance of key biodiversity observation points
- Informing and raising awareness among local people about protected areas, natural values, and opportunities for sustainable use
- Implementation of a type of grazing in line with sustainable development practices and in accordance with traditional local practices
- Initiating information/awareness-raising actions on the rules of sustainable pasture management for their owners and/or users
- Provision of equipment for patrolling, observation, and monitoring
- Identification and access to funds through programs/projects for the implementation of effective site management

4.2.4.2 **Nădab - Socodor – Vârşad** Site of Community Importance (SCI) (ROSCI0231)

This SCI has been designated under the EU Habitats Directive since 2007, as it protects an EU priority habitat type (Annex I of the Habitats Directive) 1530 'Pannonic salt steppes and salt marshes' (3,660 ha), which covered almost 50% of the Natura 2000 site at the time of designation. This habitat type is highly influenced by Pannonic climate with extreme temperatures and aridity in summer. The enrichment of salt in the soil is due to high evaporation of ground water during Summer. This SCI also protects small areas of EU habitat type (Annex 1) 6440 'Alluvial meadows of river valleys of the *Cnidion dubii*' (114 ha), which is not present in the Project Aol. In addition to habitats, the site also protects seven species from the EU Nature Directives: two amphibians (Fire-bellied Toad *Bombina bombina* and Crested Newt *Triturus cristatus*), two mammals (Steppe Polecat *Mustela eversmanii* and European Ground Squirrel *Spermophilus citellus*), one reptile (European pond terrapin *Emys orbicularis*) and two plants (*Marsilea quadrifolia* and *Cirsium brachycephalum*). The site has an area of 78 km², the

vast majority of which is contained within the Câmpia Crișului Alb și Crișului Negru SPA (ROSPA0015). Vegetation in the SCI is characterised by halophilic plants that grow in abundance in the high salinity soils of the salt marshes and steppes. In the past, the land was partially modified for agriculture, but recently, vegetation has been re-established in certain areas (EEA 2020). This protected area does not have a IUCN management category and it is designated at a regional level. The management authority is the Agenția Națională pentru Arii Naturale Protejate¹⁹. With the exception of a 3.6 ha strip along the northwestern boundary, the SCI overlaps with the entirety of the Project area, although the connection station and approximately 3.9 km of the transmission line and access road are outside the SCI (Figure 5).

A summary of the management and conservation objectives, and the activities for this site is presented in the section above (the integrated management plan includes several sites in the Crișuri Protected Area Complex).

4.2.4.3 **Câmpia Crișurilor** Key Biodiversity Area and Important Bird Area (24357)

This Key Biodiversity Area²⁰ (KBA) and Important Bird Area²¹ (IBA) overlaps substantially (76%) with the Câmpia Crișului Alb și Crișului Negru SPA. There are 15 'trigger species' for the KBA/IBA including the VU Red-footed Falcon (*Falco vespertinus*) and the NT Black-tailed Godwit (*Limosa limosa*) (BirdLife International 2024). The KBA/IBA extends over 422 km² and covers 100% of the Project area. The ecological character of the KBA/IBA is similar to that of the SPA and SCI discussed above.

¹⁹ <https://www.protectedplanet.net/555531391>

²⁰ <https://www.keybiodiversityareas.org/site/factsheet/24357>

²¹ <https://datazone.birdlife.org/site/factsheet/c%C3%A2mpia-cri%C5%9Furilor-iba-romania>

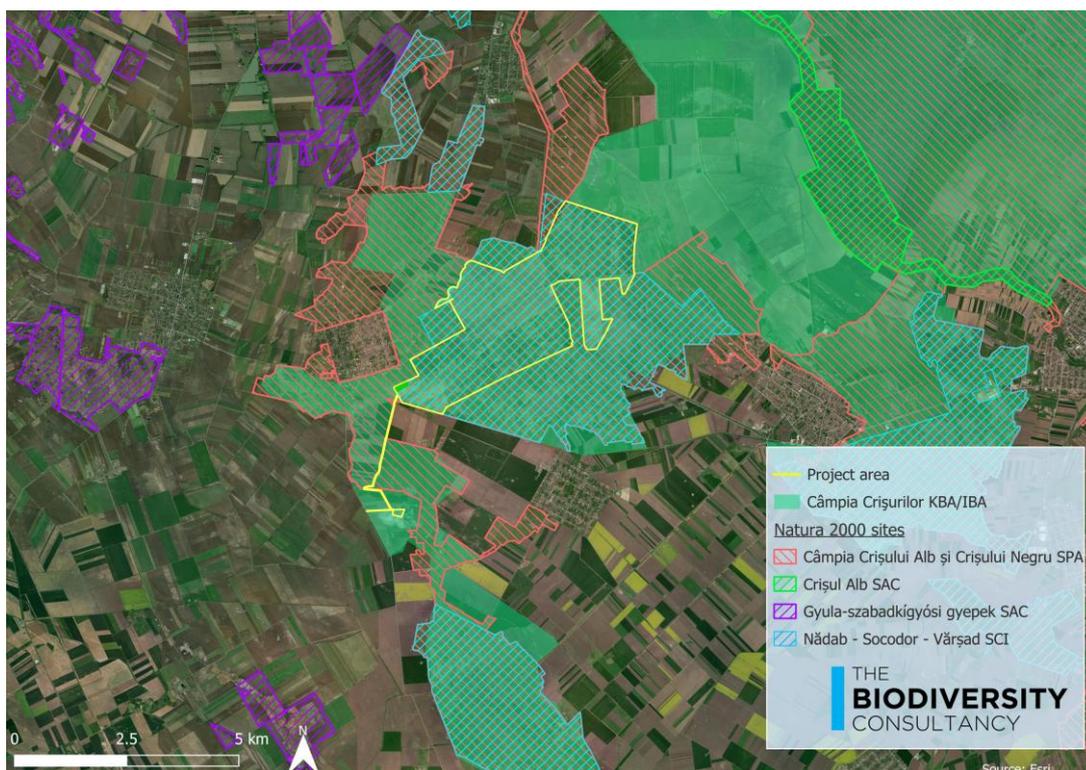


Figure 5. Overlap between the Project and the Natura 2000 sites (Source: ERM 2023)

5 Project's potential impacts on biodiversity

This section provides an overview of potential biodiversity impacts related to the Project and associated infrastructures, including the Transmission Line. The impacts mentioned below have been compiled and interpreted using the Project ESIA (ERM 2023a) and sector guidelines (Lammerant *et al.* 2020; Bennun *et al.* 2021; OCDE 2024). A quantitative residual impact assessment (after mitigation) is presented in Section 7.

5.1 Construction impacts

The Project's construction impacts arise from the land clearing activities, civil works and activities related to the installation of the solar plant and associated infrastructures (Table 7). The main impact from large-scale solar PV projects is related to the land occupancy required by solar panels (Turney & Fthenakis 2011), including loss and degradation of terrestrial habitats, direct loss of flora and fauna species due to vegetation clearing, displacement of fauna species and increase in dust covering vegetation (Bennun *et al.* 2021).

The significance of biodiversity impacts during the construction of large solar PV facilities largely depends on the prior condition of the habitat at the site (Lammerant *et al.* 2020). Where Natural Habitat is being cleared for solar energy developments, such developments generally result in a reduction in the extent and quality of such habitat, in part due to clearing required for the infrastructure footprint during construction. The magnitude of this impacts depends on the

specifications of the construction method and the type of vegetation (Hernandez *et al.* 2014). For example, grassland vegetation may persist in some form under and around the panels, if it is not eliminated during construction by the application of herbicide, scraping/levelling of the site, or application of gravel over the vegetation (Gasparatos *et al.* 2017).

Table 7. Likely construction impacts of the Project.

| Impact type | General impacts on biodiversity | Project activity associated with the potential impact |
|---|---|---|
| Loss and degradation of terrestrial ecosystems (Modified Habitats), plant species, fauna habitats | Loss of Modified Habitats and loss of individuals due to vegetation clearing. Habitat degradation due to air and soil pollution, dust deposition, reduced habitat connectivity, altered hydrology | Pre-construction activities Vegetation clearing for the solar plant Civil works and surface preparation Disposal of excavation and surplus materials Solar plant infrastructure installation |
| Spread of invasive alien species | Spread of invasive alien plants and fungal pathogens (e.g., seeds or spores transported through contaminated material (e.g. soil, gravel, etc.) or equipment/machineries from abroad) | Construction or upgrading of access roads Accidental discharge of fuels/chemicals into soil/groundwater, including during flooding events Water abstraction for construction |
| Degradation of Modified Aquatic Habitats (canals and ditches) | Habitat degradation due to air and soil pollution, dust deposition, reduced habitat connectivity, altered hydrology Loss of individuals due to habitat degradation Changes in water quality due to sediment and/or oil/fuel/chemical spills, and/or erosion/sedimentation | |
| Loss of, or disturbance to, fauna species | Disturbance due to noise, light, vibration, and human presence (machinery, vehicles, blasting), collision with vehicles, increased hunting pressure by project staff | Pre-construction activities Vegetation clearing for the solar plant. Civil works and surface preparation Disposal of excavation and surplus materials Solar plant infrastructures installation Construction or upgrading of access roads |
| Barriers to movement for mobile fauna | Preventing or hindering the movement of fauna | Fencing of the PV plant Construction of access roads. |

The Project area (including Set Aside Area) is largely dominated by Modified Habitat (98.38%), with only a small proportion (1.62%, 17.33 ha) of degraded Natural Habitat (Pannonic salt steppe and salt marsh). No permanent Project infrastructure will be installed on this Natural Habitat, and this area within the solar plant site will be set aside and enhanced for biodiversity (refer to Chapter 8). Small areas of this habitat will be temporarily impacted during the

construction of the trenching area for the underground transmission line, but this will be restored after construction. Therefore, this Project will result in no permanent direct loss of Natural Habitat.

Loss and disturbance of fauna species may occur due to hunting and poaching by people working on the Project. The Project is expected to employ approximately 500 workers during construction, with up to 50 people required to ensure operational maintenance (ERM 2023a). Disturbance of fauna species may also occur due to artificial light, noise and vibration (Bennun *et al.* 2021), although the significance of these impacts relative background levels that occurred prior to the commencement of construction need to be considered. The ESIA notes that noise during construction may be heard up to 250 m from the Project, beyond which it will likely have attenuated to background levels (ERM 2023a). The fencing of the PV plant may alter, or be a barrier to, the regular movement of mobile fauna species, depending on its design (Lovich *et al.* 2011; Wyckoff *et al.* 2018). Dust deposition during construction may affect the composition of flora communities (Farmer 1993).

The movement of vehicles and machines to undertake the clearance also carries the risk of importing seeds or propagules of invasive flora species and soil pathogens and of causing direct death of some poorly-mobile fauna, while clearance activities and civil works may also impact aquatic habitats through disturbance, sedimentation or pollution (Bennun *et al.* 2021).

5.2 Operational impacts

There is some evidence that birds may collide with solar panels (Kagan *et al.* 2014; Visser *et al.* 2019; Kosciuch *et al.* 2020), although the underlying mechanisms behind bird mortality at solar parks are poorly understood meaning it is currently not possible to predict bird collision rates with solar PV panels (Bennun *et al.* 2021). However, it is well-established that mortality rates are significantly lower compared to those associated with other types of infrastructure, such as collision with transmission or electrocution on poorly designed local distribution lines. Sensitivity to such mortality risk is well known for many European bird species (Bennun *et al.* 2021). However, as only a tiny length (50 m) of transmission line is expected to be constructed above-ground, the risk of bird collisions will be negligible. Electrocution risk is also considered to be negligible as only two pylons will be installed, and electrocutions are rare in high voltage transmission lines (Table 8).

Changes in vegetation are likely to occur due to shadowing effects from the panels that lead to changes in the plant community composition (Armstrong *et al.* 2016; Lambert *et al.* 2022; Uldrijan *et al.* 2022). This can be both negative and positive depending on the prior condition of the vegetation and the management regime of the solar farm. Where panels are installed over natural grassland habitat, this is likely to contribute to a reduction in quality of the grassland habitat (Lambert *et al.* 2023). Alternatively, where panels are installed over degraded or intensively used agricultural land (which is the case of this Project), recovery of native vegetation following the construction of the solar facility may increase

some biodiversity values (Table 8) (Jarčuška *et al.* 2024; Zhang *et al.* 2024), particularly if nature-inclusive principles are followed (Metabolic Consulting 2024).

Recent studies have shown that solar plants can have negligible negative impacts or even positive impacts for a large set of bird species in Central European agricultural landscapes, including ground-foraging passerines (Jarčuška *et al.* 2024; Gołowski *et al.* 2025). This is likely to be the case for projects located in biodiversity depleted agricultural fields or pastures, which is the case of this Project. If the vegetation in the solar farm is managed without resorting to herbicides and areas not occupied by infrastructure are managed to enhance biodiversity, insect diversity and abundance may be increased (Montag *et al.* 2016; Sinha *et al.* 2018; Blaydes *et al.* 2021, 2022; Nordberg *et al.* 2021; Nordberg & Schwarzkopf 2023).

Table 8. Likely operational impacts of the Project.

| Impact type | General impacts on biodiversity | Project activity associated with the potential impact |
|--|---|---|
| Degradation of terrestrial ecosystems (Modified Habitats), plant species, fauna habitats | Alteration of the species composition and diversity of underlying habitats because of air and soil microclimate variation due to shadow effects caused by solar panels. However, this is likely to be a positive impact as this Project which is located on degraded/agricultural land (there is potential for recovery of natural vegetation). | Vegetation management for easement maintenance of the solar park Solar plant operation |
| Loss of, or disturbance to, fauna species | Disturbance due to noise, light, vibration, and human presence (machinery, vehicles), collision with vehicles. Bird injury or death by collision with solar panels Bird injury or death by collision with the above ground collision line | |
| Spread of invasive alien species | Spread of invasive alien plants and fungal pathogens (e.g., seeds or spores transported through contaminated material (e.g. soil, gravel, etc.) or equipment/machineries from abroad) | |
| Degradation of Modified Aquatic Habitat (canals and ditches) | Changes in water quality due to sediment and chemical runoff | Accidental discharge of fuels/chemicals into groundwater |
| Barriers to movement for mobile fauna | Preventing or hindering the movement of fauna | Fencing of the PV plant |

It is likely that prey species density for birds of prey may increase in the Project area as a result of abandoning agriculture and adopting management practices that favour biodiversity. This may be the case for rodents and other ground dwelling mammals, reptiles and small birds. However, most birds of prey, especially the larger species will likely be displaced by the presence of the solar plant. For these species the functional loss of habitat may result in abandonment of a territory or of a portion of the territory for resident/breeding species.

The Project includes areas that are regularly flooded which are used by a large set of waterbird species, including some of the priority species. If solar panels or other infrastructure are installed in these areas, there will be loss of foraging/resting habitat for some of these species.

During the operation, the Project may require periodic maintenance (e.g., vegetation management), which risks facilitating the spread of invasive plants (Grotsky & Hernandez 2020) and potentially can affect a range of small bird species, reptiles and small mammals (Bennun *et al.* 2021). However, the preferred option for maintenance of vegetation is sheep grazing complemented with some manual weeding and vegetation cutting (ERM 2023a), which is not expected to contribute to spreading invasive species.

These activities will also involve occasional disturbance by noise and vibration and have the potential to introduce invasive species (Bennun *et al.* 2021). Aquatic insects can be attracted to the polarised light reflected by PV panels and display maladaptive behaviour mistaking the panels for water surfaces (Horváth *et al.* 2010).

5.3 Cumulative impacts

The Project's ESIA identified that two other photovoltaic (PV) projects are currently being developed by Monsson within an approximate 10 km radius – Nădab 1 and 2 (approx. 675 MW) and Chisineu-Cris PV (50 MW). These projects are in different stages of permitting and could potentially be implemented on a similar timeline with the Dama Project.

The Project's Cumulative Impact Assessment focused on cumulative impacts to two threatened bird species, Saker Falcon and Eastern Imperial Eagle, which were deemed susceptible to collision with transmission lines and electrocution from distribution lines (ERM 2023d). Two other species, Red-footed Falcon and Red-breasted Goose were not included as they were assessed as having relatively lower mortality risk from collision and electrocution (ERM 2023d). The contribution of the Project to cumulative impacts to both species are assessed as being very low to insignificant because the transmission line will be buried, with only two pylons being overground. Additionally, mitigation measures have been proposed to further reduce Project impacts.

6 Mitigation strategy

6.1 Mitigation hierarchy

The mitigation measures adopted by the Project will follow the mitigation hierarchy: avoid, minimise, restore, and compensate/offset (CSBI & TBC 2015) (Figure 6). Avoidance entails 'designing out' an impact or risk (e.g., through relocating a project component, avoiding a harmful activity, employing alternative technology), preventing their expected impacts on biodiversity. Minimisation reduces the severity of impacts on biodiversity by controlling or limiting the source of that impact. Such actions reduce the likelihood or magnitude of biodiversity impacts, but do not completely prevent them.

Restoration seeks to recreate the original (pre-project) habitat type or to actively enhance the rate of recovery of degraded habitats on the actual Project site, with a focus on areas affected temporarily during construction. Where significant residual impacts remain, compensation/offset actions to achieve an overall NNL for Natural Habitat, where feasible, and NG for Critical Habitat-qualifying features will need to be developed.

This section presents measures that fall in the first three steps of the mitigation hierarchy (avoid, minimise, restore), while Section 8 deals with offset and additional conservation actions.

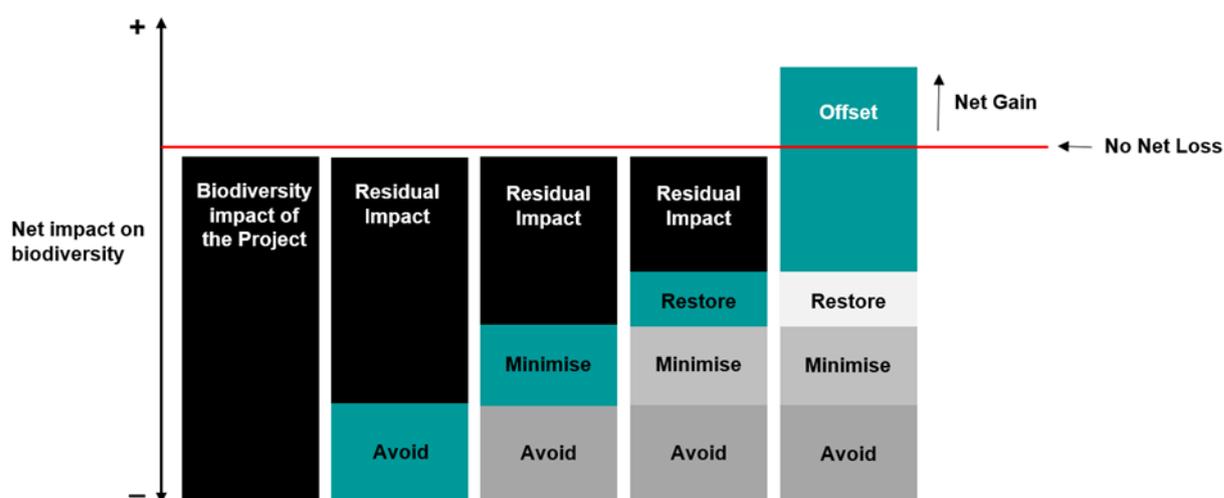


Figure 6. The Mitigation Hierarchy and delivery of net gain or no net loss for biodiversity.

6.2 Mitigation actions

A range of good-practice mitigation actions were included in the Project's ESIA (ERM 2023a) and supplementary documents. Additional measures are provided in Table 9 and Table 10, where necessary, based on GIIP.

Additional **avoidance** measures were adopted during the development of this BAP (post-ESIA) and considering feedback from stakeholders. The following important avoidance measures will be implemented by this Project:

- Avoidance of all direct impacts on the priority habitat Pannonic salt steppe and salt marsh through setting aside, protecting and enhancing that area (refer to Section 7.3).
- Avoidance of all direct impacts on waterbird habitat through setting aside, protecting and enhancing that area (refer to Section 7.2).
- Avoidance of impacts on birds through collision and electrocution by installing the vast majority of the transmission line underground (only two pylons are overground).
- Removal of nine sub-stations from the original design and making those areas available for grassland creation.
- Avoid vegetation clearing and construction works during the breeding period of ground breeding priority bird species (between 15 April and 15 July)

After avoidance, the Project will implement the following mitigation actions:

- Impact **minimisation** through controls on clearance or degradation of vegetation and disturbance of fauna;
- **Restoration** of habitats on the Project site using native species will be undertaken as soon as possible at the end of construction (refer to Section 6.3);
- **Offsetting** and **additional conservation actions** to address residual impacts are presented in Section 8 of this BAP.

The mitigation actions summarised in Table 9 and Table 10 have been collated from the ESIA for the Project (ERM 2023a), and have been supplemented with GIIP mitigation actions for solar projects from various guidance documents (World Bank Group 2007a, 2007b; Lammerant *et al.* 2020; Bennun *et al.* 2021; WWF & The Biodiversity Consultancy 2023; Metabolic Consulting 2024).

As part of the Project decommissioning, the grasslands will be kept, and the site will be reinstated as pastureland. When the operational life of the Project comes to an end, a detailed Decommissioning Plan will be prepared in line with the technology available at the time to guide the execution of the decommissioning works (ERM 2023a).

Table 9. Summary of the Project's general mitigation actions for construction contained in the ESIA (ERM 2023a), supplemented with Good International Industry Practice (GIIP) mitigation measures (World Bank Group 2007a, 2007b; Lammerant et al. 2020; Bennun et al. 2021; WWF & The Biodiversity Consultancy 2023; Metabolic Consulting 2024).

| Impact type | Mitigation hierarchy | Mitigation action and details | Plan(s) | Responsibility |
|---|----------------------|--|--|--|
| Clearing, stripping, removal or disturbance of vegetation | Avoid | <ul style="list-style-type: none"> Restrict all activities to modified pasture / agricultural land only. Develop sensitivity/exclusion maps for sensitive priority species and habitats. Avoid locating permanent infrastructure as well as temporary construction camps and material/equipment laydown areas within or near identified natural or critical habitat (i.e. the semi-natural steppe and salt marsh/wetland habitat), as well as important areas for priority species. Avoid vegetation clearing, road works and panel installation during the breeding period of species that breed on the ground – 15 April to 15 July. Avoid vegetation clearing in any riparian areas as per the IFC EHS Guidelines, and avoid clearing near drainage canals (keep a distance of 7m from the canals) during the breeding season for amphibians. Use existing access roads or upgrade existing roads wherever possible before considering new access road construction. Prohibit travel on unauthorised roads/land to protect existing vegetation and minimise soil inversion. Surrounding vegetation and natural steppe and salt marsh habitat must be protected by employing appropriate barrier fencing and/or other forms of demarcations. Demarcate the construction zone or servitude for the Overhead Transmission Line (OHTL) on a map and on the ground clearly using high visibility tape for instance, to avoid impacting on sensitive areas outside of the permitted construction area. | Construction Environmental Management Plan | <p>Project Environmental Management</p> <p>EPC contractor</p> <p>Biodiversity Specialist</p> |
| Clearing, stripping, removal or disturbance of vegetation | Minimise | <ul style="list-style-type: none"> Only the vegetation that is absolutely necessary to be removed for construction purposes may be cleared, and where possible cut vegetation to ground level instead of stripping areas entirely. Properly working machinery must be engaged in the process of land preparation and execution of construction works, and the construction site must be secured in accordance with the conditions of the competent authority in Romania. Where possible, employ manual methods (e.g. hoeing or hand-pulling) to clear the ground of vegetation to limit soil and fauna disturbance, particularly in the vicinity of watercourses such as drainage canals. | Construction Environmental Management Plan | <p>Project Environmental Management</p> <p>EPC contractor</p> |

| Impact type | Mitigation hierarchy | Mitigation action and details | Plan(s) | Responsibility |
|---|--|--|---|--|
| | | <ul style="list-style-type: none"> Implement relevant construction standards to limit the disturbance and erosion potential for soils, for example scheduling to avoid heavy rainfall periods when practical, mulching to stabilise exposed areas, and re-vegetating areas promptly (see below). | | |
| Clearing, stripping, removal or disturbance of vegetation | Restore (refer to Section 6.3 for further information) | <ul style="list-style-type: none"> Compile a suitable post-construction habitat restoration plan for temporary areas used during construction. For salt steppe and salt marsh habitat, habitat restoration and/or rehabilitation activities will need to be informed by the guidelines and recommendations contained in the following documents/guides: Management of Natura 2000 habitats: 1530 *Pannonic salt steppes and salt marshes (Šefferova Stanova <i>et al.</i>, 2008²²). Revegetate temporary-use and lay down areas as soon as reasonably practicable after construction activities are complete. Separately retain and store topsoil and sub-soil stripped from the construction areas for later use during reinstatement. Use native and non-invasive species for landscaping and rehabilitation works. Remove invasive plant species whenever possible and cultivate native plant species. Use soil, mulch and vegetation debris (that contain natural seed stock) to facilitate natural revegetation of disturbed areas, where reasonably practicable. | Habitat restoration plan | Project Environmental Management EPC contractor |
| Impacts on European Souslik | Avoidance | <ul style="list-style-type: none"> Pre-construction surveys should determine the presence of European Souslik burrows and construction activities should be avoided in those locations If European Souslik burrows are detected, earthworks near the burrows should be conducted outside this species breeding (March-July) and hibernation periods (late September – early March). | Construction Environmental Management Plan Works Environmental Monitoring Plan | Project Environmental Management EPC contractor |
| Impacts on European Souslik | Minimise | <ul style="list-style-type: none"> If avoiding construction close to Souslik burrows is not possible, individuals at risk must be relocated. | Construction Environmental Management Plan | Project Environmental Management EPC contractor |

²² Available online at: https://ec.europa.eu/environment/nature/natura2000/management/habitats/pdf/1530_Pannonic_salt_steppes.pdf

| Impact type | Mitigation hierarchy | Mitigation action and details | Plan(s) | Responsibility |
|---|----------------------|--|---|--|
| | | | Works Environmental Monitoring Plan | |
| Vehicle collisions with fauna | Minimise | <ul style="list-style-type: none"> • Use existing access roads or upgrade existing roads wherever possible before considered new access road construction. • Limit vehicle speed on site for construction vehicles and vehicles accessing the site (set speed limit at less than 30 km/hr). • Place appropriate limits on the number of vehicle movements to and from the construction site. • Restrict vehicles to the use of only authorised access roads. • Restrict activities to day-time hours where possible when visibility is good and potential fauna collisions with vehicles can be more easily avoided. Where this is not possible, driver awareness training and reduced speed limits on internal roads will be employed. | Construction Environmental Management Plan Works Environmental Monitoring Plan | Project Environmental Management EPC contractor |
| Hunting/poaching | Avoid / minimise | <ul style="list-style-type: none"> • Illegal activities such as hunting of wildlife or collecting of indigenous plant species are to be discussed with construction workers as part of their inductions and regular training, and such activities are to be prohibited. • Control influx of people into the Project area. | Construction Environmental Management Plan | Project Environmental Management EPC contractor |
| Barrier to species movement | Avoid / minimise | <ul style="list-style-type: none"> • Avoid placing impermeable fences that could interfere with species movement. Use fences with regular passages (e.g. culverts) or larger mesh sizes, and a ground clearance under the fence of at least 10-15 cm for small animals. • Develop protocols for the shepherding of any wild animals found in construction areas where they are unable to exit the construction site by themselves. | Construction Environmental Management Plan | Project Environmental Management EPC contractor |
| Animals trapped in construction sites and excavations | Minimise | <ul style="list-style-type: none"> • Create escape ramps (timber and soil) for animals trapped in excavations. • Undertake periodic checks of excavations. • Call local vet if the trapped animal is injured. • According to OUG 57/2007, handling of animals is forbidden for species included in annexes of EU Habitats/Birds Directives or protected in Romania (Annexes 4A and 4B of OUG 57/2007). Licenses can be only obtained in advance of animal relocations, specifying species and numbers, which is not possible to anticipate for animals trapped in excavations. | Construction Environmental Management Plan | Project Environmental Management EPC contractor |
| Dust pollution | Minimise | <ul style="list-style-type: none"> • Minimising the surface clearing to minimum required for operations, • Avoiding earthworks during particularly windy periods • Minimising the size of material/spoil storage piles, | Construction Environmental Management Plan | Project Environmental Management EPC contractor |

| Impact type | Mitigation hierarchy | Mitigation action and details | Plan(s) | Responsibility |
|--------------------------|----------------------|--|---|---|
| | | <ul style="list-style-type: none"> • Covering soil stockpiles during windy periods with appropriate cover materials. • Restricting the unnecessary traffic, • Using a suitable cover/tarp when transporting soil/sand liable by truck that could be liable to spillage or dust pollution. • Apply water or non-toxic chemicals to minimise dust from vehicle movements. • Minimising and strictly regulating the offsite hauling of debris, • Using the truck bed covers when hauling materials, • Using gravel for the access roads, • Employing suitable dust suppression on bare soil surfaces exposed to wind and dirt roads used by heavy construction vehicles, and/or • Planting vegetation where relevant. | | |
| Water and soil pollution | Avoid / minimise | <ul style="list-style-type: none"> • Water use efficiency to reduce the amount of wastewater generation. In accordance with the IFC EHS Guidelines, identify opportunities to prevent or reduce wastewater pollution through measures such as recycle/reuse, input substitution, or process modification (e.g. change of technology or operating conditions/modes). When water quality criteria allow, stormwater should be managed as a resource for meeting water needs at the site. • Assess compliance of wastewater discharges with the applicable discharge standard. Discharges of process wastewater, sanitary wastewater, wastewater from utility operations or stormwater to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria or, in the absence of local criteria, other sources of ambient water quality. • In accordance with the IFC EHS Guidelines, construction personnel should be trained to minimise water consumption for hand washing or showering and to ensure an understanding of water resource and wastewater issues. • Implement a Project-specific Construction Waste Management Plan (CWMP). • Develop and maintain a hazardous waste inventory to document and track sanitary waste generated and segregated. Sanitary wastewater tanks to be properly maintained and inspected to ensure tanks do not overflow. Engage a licensed waste/wastewater contractor for the periodic removal of septic tanks. • Site inspections to be carried out regularly to ensure that all wastewater generated is properly managed, and no leakages or spill occur. In the event of a spill or overflow, immediate action will be taken in accordance with spill containment procedures and clean up procedures. | <p>Construction Environmental Management Plan</p> <p>Emergency Response Plan</p> <p>Waste Management Plan</p> | <p>Project Environmental Management</p> <p>EPC contractor</p> |

| Impact type | Mitigation hierarchy | Mitigation action and details | Plan(s) | Responsibility |
|--|----------------------|--|--|--|
| | | <ul style="list-style-type: none"> • Disposing of waste into the environment is prohibited. Waste products to be collected and transported to registered waste facilities only for proper disposal. • Establish a secured designated fuel and chemical storage area, with an impervious cover and sufficient containment volume for the storage of all chemicals. • Restrict refueling of vehicles or equipment to impermeable hard-standing areas with strict spill controls. Always use drip trays when temporarily storing or handling fuels or when servicing/repairing vehicles on site. Employ best practice measures in handling and storing fuels, oils and chemicals liable to spillage. • Emergency spill kit provision and training, and develop procedures for emergency/spill response and for the storage and handling of fuels, construction materials and wastes. • Clean-up any spills immediately. Make sure to have recipients that can collect fuels in case of leaks as well as a minimum of 3 kg of environmentally friendly substances able to absorb fuel and other spills. Inform the relevant authorities as soon as any significant or major spill event takes place. • Remediate any soils or habitats where spills take place. • Check hoses and valves regularly for leaks ensure they are turned off and locked when not in use, and regularly check construction vehicles to identify and repair leaks or damaged fuel/lubricant lines. | | |
| Disturbance by noise, light, vibration | Avoid / minimise | <ul style="list-style-type: none"> • To protect bats, avoid intensive construction works in the period from dusk to dawn (in the period April-October), when bat activity is at its highest. During this period, artificial lighting should be restricted only to the construction works zone. • Avoid the use of machinery in the vicinity of watercourses, in accordance with the IFC EHS Guidelines. Instead, use hand removal of vegetation. • To protect small, less-mobile species such as reptiles and amphibians, intense construction should be avoided in particular seasons in particular areas, for example, avoiding construction near drainage canals (keep a distance of 7m from the canals) during the breeding season to protect priority amphibian species. A good understanding of the seasonal patterns and ecology of sensitive species is required to identify key periods and areas to avoid, therefore, collaboration with biodiversity specialists is required. • In order to minimise the levels of noise, select equipment with lower sound power levels. Use noise minimising technology where possible, install acoustic | <p>Construction Environmental Management Plan</p> <p>Works Environmental Monitoring Plan</p> | <p>Project Environmental Management</p> <p>EPC contractor</p> <p>Biodiversity Specialist</p> |

| Impact type | Mitigation hierarchy | Mitigation action and details | Plan(s) | Responsibility |
|--|----------------------|--|---|---|
| | | <p>enclosures for equipment casing radiating noise, install vibration isolation for mechanical equipment and limit operation hours for specific pieces of equipment. Equipment which is not being used must be turned off. Maintain vehicles and equipment in good working condition.</p> <ul style="list-style-type: none"> • Staff and visitors must be warned not to disturb birds, especially during the nesting period where nests occur on the site or surrounds. Place information signs along the road in order to inform people of noise disturbance during working hours. • Monitoring: monthly noise measurement with adequate phonometers, conducted by trained specialists. In accordance with the IFC EHS Guidelines, noise levels on-site should not exceed levels of 70 dBA, or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site. • Aim lights away from any adjacent sensitive habitats. Use directional lighting to reduce light spill and prevent light increases in adjacent sensitive habitats such as bushes and wooded habitats. • Use low intensity lights where possible, and use appropriate lighting that minimises ecological and physiological effects on wildlife and also limits attraction of insects e.g. use of long-wavelength (warm white, orange, red and infra-red) light instead of short-wavelength (UV, cool white, blue and green LEDs). • Enforcing good behaviour by construction workers, including prohibition of hunting, trapping, fishing and general harassment of wild animals. | | |
| Introduction/spread of invasive plants | Avoid / minimise | <ul style="list-style-type: none"> • Minimise the need to introduce foreign soils to the site that may carry foreign plant material. • Wash down vehicles before they enter the site on designated areas. • Remove invasive plant species whenever possible. Compile a suitable Invasive Alien Plant (IAP) species control plan and programme to eradicate dense colonies of alien plants and control the spread of minor species and weeds. • Implement an IAP species control plan and monitoring programme. • Monitor IAPs to inform further management actions as required. | <p>Construction Environmental Management Plan</p> <p>Invasive Alien Plant (IAP) species control plan and monitoring programme</p> | <p>Project Environmental Management</p> <p>EPC contractor</p> |

Table 10. Summary of the Project's general mitigation actions for operations contained in the ESIA (ERM 2023b), supplemented with Good International Industry Practice (GIIP) mitigation measures (World Bank Group 2007a, 2007b; Lammerant et al. 2020; Bennun et al. 2021; WWF & The Biodiversity Consultancy 2023; Metabolic Consulting 2024).

| Impact type | Mitigation hierarchy | Mitigation action and details | Plan(s) | Responsibility |
|--|----------------------|--|--|---|
| Priority bird collisions and electrocutions with transmission line | Avoid / minimise | <ul style="list-style-type: none"> The majority of the transmission line will be underground, although a ~50 m section will be above ground. <p>Where any length of transmission line run above ground:</p> <ul style="list-style-type: none"> Implement safe transmission lines, with insulation and spacing of conductors that eliminate electrocution risk for birds. Allow for a minimum spacing of 1 m between power cables to safeguard bird species from electrocution risk. In accordance with the IFC EHS Guidelines, electrocutions can be avoided by installing elevated perches, insulating jumper loops, placing obstructive perch deterrents, changing the location of conductors, and/or using raptor hoods. Installing flight diverters (hanging, balls or spiral diverters) along transmission line routes in the vicinity of natural habitat and in areas where birds are likely to move locally, with spacing according to international good practice guidance (e.g. (APLIC 2012). | Construction Environmental Management Plan | Project Environmental Management Biodiversity Specialist |
| Barrier to species movement | Minimise / restore | <ul style="list-style-type: none"> Develop an adaptive plan if operational monitoring results show that any site fences present a physical barrier to faunal movements, which include the use of mesh or other materials with appropriate spacing to replace old mesh at strategic sections. Investigate opportunities to conserve, better manage or create suitable alternative habitats or enhancement of existing ones to support displaced species where applicable, e.g. planting native trees/vegetation around site perimeter, creating bird nesting/breeding places or creating green corridors. This will be informed by operational phase monitoring of species. | Fauna Adaptive Management Plan Habitat restoration plan | Project Environmental Management EPC contractor |
| Water and soil pollution | Avoid / minimise | <ul style="list-style-type: none"> Vegetation maintenance by means of sheep grazing (conservation grazing), no synthetic fertilisers or pesticides to be used. Employ dry cleaning and cooling technologies (e.g. using air) to prevent soil and water contamination. Retaining as much vegetation around the solar park as possible may reduce dust and therefore the need for frequent cleaning. Disposing of waste into the environment is prohibited. Waste products to be collected and transported to registered waste facilities only for proper disposal. | Waste Management Plan | Project Environmental Management EPC contractor |
| Disturbance by noise and light | Minimise | <ul style="list-style-type: none"> Staff and visitors must be warned not to disturb birds, especially during the nesting period where nests occur on the site or surrounds. Place information signs along the road in order to inform people of noise disturbance. | | Project Environmental Management EPC contractor |

| Impact type | Mitigation hierarchy | Mitigation action and details | Plan(s) | Responsibility |
|-------------|----------------------|--|---------|----------------|
| | | <ul style="list-style-type: none"> • Aim lights away from any adjacent sensitive habitats. Use directional lighting to reduce light spill and prevent light increases in adjacent sensitive habitats such as bushes and wooded habitats. • Use low intensity lights where possible and use appropriate lighting that minimises ecological and physiological effects on wildlife and also limits attraction of insects e.g. use of long-wavelength (warm white, orange, red and infra-red) light instead of short-wavelength (UV, cool white, blue and green LEDs). | | |

6.3 On-site habitat restoration

Restoration is a key step in the mitigation hierarchy, and the Project's ESIA identifies restoration as a measure that will be implemented to reduce the Project's biodiversity impacts (ERM 2023a). The ESIA specifically identifies the need to implement restoration of Pannonic salt steppes and salt marshes (Natural Habitat, Annex I priority habitat) according to the guidelines and recommendations of Šeffero \acute{v} a Stanov \acute{a} *et al.* (2008). However, the entire area of this Natural Habitat within the solar plant site will be set aside and enhanced for biodiversity (refer to Chapter 8).

The areas to be restored on the Project site include areas affected temporarily during construction, including those that will be used as lay-down areas and the routes of all electric cables to be buried within the Project site. These areas include all spaces between panel rows, the 7 m-wide buffer along the perimeter fence, the 7 m-wide buffers on the banks of canals/ditches, and the locations of the nine substations in the original design (refer to Section 2). Very small areas of Natural Habitat along the underground transmission line easement, which will be temporarily impacted during construction, will also be restored to avoid permanent impacts (see Section 6.3.2).

6.3.1 Restoration of Modified Habitat in the solar plant area

The solar plant area contains 478.83 ha of currently Modified Habitat (arable land) that will be impacted during construction but will not house permanent infrastructure. Post-construction, it is expected that the biodiversity value of these temporarily impacted areas in the solar plant area will increase through conversion of arable land to grassland. Some areas may be colonised naturally by native grassland (passive restoration), but active intervention through seeding is likely to be required on existing arable land.

The restoration activities will be informed by the guidelines and recommendations contained in the Management of Natura 2000 habitats: 1530 *Pannonic salt steppes and salt marshes (Šeffero \acute{v} a Stanov \acute{a} *et al.* 2008). The following GIIP measures will be implemented:

- Separately retain and store topsoil and sub-soil stripped from the construction areas for later use during reinstatement
- Active reseedling will be undertaken as required should natural colonisation not be effective, in which case a mix of native grassland species from the local area will be used to create grassland habitat on former arable land.
- Use soil, mulch and vegetation debris that contain natural seed stock to facilitate natural revegetation of disturbed areas, where reasonably practicable.

The restoration of the Modified Habitat within the solar plant area is considered to be an Additional Conservation Action because this set of measures will deliver Net Gain of biodiversity through conversion of agricultural land to natural grassland. Additional information is provided in Section 8.3.1 (ACA02).

6.3.2 Restoration of Natural Habitat in the underground transmission line easement

The 2.43 ha area of Pannonic salt steppes and salt marshes Natural Habitat in the underground transmission line easement that is impacted during construction (Figure 13) will be restored. The following mitigation and restoration activities will be implemented:

- Grassland turfs will be cut in squares, removed and stored separately
- Topsoil (20 cm depth) will be removed and stored separately
- Subsoil will be excavated and stored separately from topsoil
- Cables will be installed and subsoil will be reinstated
- Topsoil will be reinstated
- Grassland turfs will be put back in the original location

Management actions will be implemented to ensure the success of the translocation, including invasive weed control, supplementary seeding with native grassland plant species where necessary, and implementing a biomass control regime sensitive to the grassland vegetation (grazing and/or mowing at appropriate intervals and seasons).

A habitat restoration plan will be prepared which will describe the above measures and will include adaptive management to address scenarios in which restoration may be unsuccessful. This may include measures such as intervening with other restoration techniques, such as seeding, as a precaution in case the proposed restoration does not deliver the expected results.

The part of the Project area that supports areas of degraded Pannonic salt steppe and salt marsh habitat and an area that is subject to seasonal flooding (providing foraging habitat for some priority birds) will be avoided by the development, and will be set aside for biodiversity. The existing habitats there will be enhanced, and this set of measures are presented in Section 8.

7 Residual impact assessment

7.1 Scope of this assessment

The residual impacts were estimated for the Project components, which are described in Section 2 and illustrated in Figure 2 and Figure 3. Impacts from temporary Project components were treated in the same way as the permanent ones in this assessment given that the on-site habitat restoration will have different objectives in different parts of the Project site.

This residual impact assessment (RIA) focuses on priority biodiversity values likely to be affected by the Project, as these values are subject to NG and NNL requirements under IFC PS6. Priority biodiversity values are presented in Section 4 above.

The scope of this assessment includes the main direct impacts of the Project, which include:

- Habitat loss/degradation under the Project footprint and a buffer around it;

- Bird collisions with the overhead section of the transmission line;
- Fauna habitat disturbance and displacement from noise, dust and vibrations.

The Project is located in a landscape with existing land use activities including agriculture, villages, roads and other development activities. Despite the likely ongoing background declines to biodiversity, a static baseline has been used in the quantification of residual impacts; this is considered to be a precautionary approach.

To address the impacts summarised in Section 5 above, the Project has committed to implementing mitigation measures, including those described in the ESIA and in Section 6 of this BAP. These mitigation measures include avoidance, minimisation and on site-restoration, which have been taken into consideration when assessing the residual impacts of the Project. During the development of this BAP (post-ESIA), additional avoidance measures have been adopted (see Section 6.2), which have been considered in this RIA.

This RIA makes the following broad assumptions about the scale of impacts, and responses of priority biodiversity values to these impacts:

- This assessment is based on the Project design described in the ESIA and the .kmz file provided by Rezolv Energy on 12 December 2024. Any modifications to infrastructure design may change the residual impacts predicted in this BAP, and modifications should be reflected in future versions of the BAP;
- This assessment does not take into account cumulative impacts (see Section 5.3 for more details); and
- This assessment assumes that all impact avoidance and minimisation actions, as outlined in the ESIA and this BAP, are implemented as planned.

7.2 Fauna

The most important impact pathways affecting Fauna species are:

- Habitat loss and degradation resulting from habitat conversion under the Project footprint, and displacement of Fauna in a buffer around the Project
- Bird mortality from collisions and electrocution with the OHTL

Fifty-six species of birds, four mammals, two reptiles and three amphibians have been identified as priority biodiversity values in this BAP (Section 4.2). Where possible, species with common biological attributes or responses to the Project have been assessed for residual impacts using the same approach, as outlined below.

7.2.1 Habitat loss and degradation

Species that are likely to suffer negligible impacts through habitat loss under this Project

Recent studies have shown that solar plants can have negligible negative impacts or even positive impacts for a large set of bird species in Central European agricultural landscapes, including ground-foraging passerines (Jarčuška *et al.* 2024; Goławski *et al.* 2025). This is likely to be the case for projects located in biodiversity depleted agricultural fields or pastures, which is the case of this Project. If the vegetation in the solar farm is managed without resorting to herbicides and areas not occupied by infrastructure are managed to enhance biodiversity, insect diversity and abundance may be increased (Montag *et al.* 2016; Sinha *et al.* 2018; Blaydes *et al.* 2021, 2022; Nordberg *et al.* 2021; Nordberg & Schwarzkopf 2023).

The Project seeks to have an increase in both area and quality of the grassland in the Project area (see Section 8.3), hence, no significant residual impacts for passerines and other non-raptor terrestrial bird species are predicted, and accordingly, no offsetting will be required. The same is true for priority species of mammals, amphibians, reptiles and birds that, in the Project area, are mostly associated with ditches and riverine vegetation, habitats which are not likely to be negatively affected by the Project, as all ditches/canals and a 7 m buffer on each side will not be affected by the Project. Regarding bats, they are not known to collide with solar panels, and as to other potential impacts, results from operational projects are not conclusive, with some studies suggesting some level of displacement and behavioural shifts (Harrison *et al.* 2016; Barré *et al.* 2021), while others suggest that the likely increase in prey availability may attract bats and provide gains (Harrison *et al.* 2016). Table 11 lists the priority species that are not likely to be negatively affected by the Project.

Table 11: Priority Fauna species which are considered to suffer negligible negative impacts

| Common name | Scientific name | Comment |
|-----------------------|----------------------------|---|
| Barred Warbler | <i>Sylvia nisoria</i> | Rare summer visitor not yet detected in surveys/monitoring. Probably only occurs in the Project area during migratory passage, using mostly the vegetation around the ditches. |
| Bluethroat | <i>Luscinia svecica</i> | Summer visitor and passage migrant that regularly breeds in the reedbeds. It has not yet been detected in surveys/monitoring. If it occurs in the Project area, it will use mostly the vegetation around the ditches both for breeding and as migratory stopover. |
| Common Kingfisher | <i>Alcedo atthis</i> | Resident. Should occur mainly in the ditches and surrounding habitat. Only one individual detected during monitoring surveys. |
| Common Little Bittern | <i>Ixobrychus minutus</i> | Summer visitor and passage migrant. Should occur mainly in the ditches and surrounding habitat. Only one individual detected during monitoring surveys. |
| European Roller | <i>Coracias garrulus</i> | Summer visitor and passage migrant. This species is relatively tolerant of infrastructure and likely to forage within the Project area. |
| Lesser Grey Shrike | <i>Lanius minor</i> | Common summer visitor and passage migrant. This species is relatively tolerant of infrastructure and likely to forage within the Project area. |
| Red-backed Shrike | <i>Lanius collurio</i> | Common summer visitor and passage migrant. This species is relatively tolerant of infrastructure and likely to forage within the Project area. |
| Tawny Pipit | <i>Anthus campestris</i> | Common summer visitor and passage migrant. This species is likely to be able to forage and breed close to the Project infrastructure. |
| Turtle Dove | <i>Streptopelia turtur</i> | Summer visitor and passage migrant. Probably only occurs in the Project area during migration. Not yet detected during monitoring |

| Common name | Scientific name | Comment |
|-----------------------------|---------------------------------|---|
| Common Noctule | <i>Nyctalus noctula</i> | According to the monitoring surveys it is common in the Project area |
| Pond Bat | <i>Myotis dasycneme</i> | Detected in the Project area |
| Schreiber's Bent-winged Bat | <i>Miniopterus schreibersii</i> | According to the monitoring surveys occurs in the Project area |
| European Souslik | <i>Spermophilus citellus</i> | Detected in the Project area, not likely to be significantly affected by the presence of the infrastructure |
| Eurasian Otter | <i>Lutra lutra</i> | Detected in the Project area, likely to occur mainly in the ditches |
| European Pond Turtle | <i>Emys orbicularis</i> | Detected in the Project area, likely to occur mainly in the ditches |
| Sand Lizard | <i>Lacerta agilis</i> | Detected in the Project area, not likely to be significantly affected by the presence of the infrastructure |
| European Fire-bellied Toad | <i>Bombina bombina</i> | Detected in the Project area, not likely to be significantly affected by the presence of the infrastructure |
| European Tree-frog | <i>Hyla arborea</i> | Detected in the Project area, not likely to be significantly affected by the presence of the infrastructure |
| Common Spadefoot | <i>Pelobates fuscus</i> | Detected in the Project area, not likely to be significantly affected by the presence of the infrastructure |

However, it must be acknowledged that there is a general knowledge deficit concerning the impacts of PV projects on biodiversity, including a lack of empirical evidence on the efficacy of mitigation and compensation actions (see Gómez-Catasús *et al.* 2024). For all priority biodiversity values, a robust monitoring program is required to validate these assumptions and re-evaluate the necessity of improving mitigation and/or implementing additional conservation actions, through adaptive management. Section 9 of this BAP includes a Framework Biodiversity Monitoring and Evaluation Plan.

Apart from the species that were previously mentioned, the Project was expected to impact waterbirds through habitat degradation. The most important area for water birds within the Project area was identified on modelled extent of flooding from the Project hydrological study (Fichtner GmbH & Co. KG 2023) and publicly available flood modelling data from the Romanian Government²³ were used. These data indicated that parts of the eastern section of the Project area and much of the central-southern Project area were likely to be inundated under 1:100-year flood events. However, this likely overestimates the extent of regularly inundated land that is likely to be used by waterbirds on a regular (i.e. annual) basis. Therefore, we refined the extent of regularly inundated land by comparing the modelled area to historical aerial imagery (Google Earth (all available dates, but particularly 27 February 2024), ESRI World Imagery WayBack (all available images) and drone photography of the site taken on 14 November 2024; Figures 8-12). These sources suggested that only parts of the area modelled in the eastern part of the Project area (east of the 79A road and south of the Poganiu channel) are likely to be regularly inundated, with areas west of the 79A road likely inundated only during flood or high rainfall events. The area of regularly inundated land inside the Project area identified as waterbird

²³ <https://inundatii.ro/>

foraging habitat covers an area of 21.49 ha (Figure 7, Figure 8). Mapped waterbird habitat does not include the drains that run throughout the Project area, which may also support waterbird species but are not proposed to be altered by the Project.

In order to achieve NNL for priority waterbird species (Table 12), the Project committed to set aside this area that is frequently inundated (see Section 6.2 and 6.3). Therefore, residual impacts for these species are considered non-significant as the Project will not affect their preferred habitat.

Table 12. Waterbird species for which impacts will be avoided through the set aside and the preservation of the ditches

| Species/Habitat | Scientific name | Comments |
|---------------------------|-------------------------------|--|
| Black Tern | <i>Chlidonias niger</i> | Likely to be uncommon in the Project area (no observations so far). More likely to forage in the areas that are subject to flooding and on the ditches |
| Black-crowned Night-heron | <i>Nycticorax nycticorax</i> | Likely to be uncommon in the Project area (two individuals detected). More likely to forage in the areas that are subject to flooding and on the ditches |
| Black-headed Gull | <i>Larus ridibundus</i> | So far, it was detected in low numbers but expected to be numerous on occasions. More likely to forage in the areas that are subject to flooding |
| Black-tailed Godwit | <i>Limosa limosa</i> | Likely to be uncommon in the Project area (no observations so far from surveys but detected in the set aside area in relatively large numbers in the past, A Nagy, pers. com.). More likely to forage in the areas that are subject to flooding |
| Black-winged Stilt | <i>Himantopus himantopus</i> | Likely to be uncommon in the Project area (no observations so far from surveys, but there are some records in the area. More likely to forage in the areas that are subject to flooding and is expected to breed if there are regularly flooded areas present. |
| Common Crane | <i>Grus grus</i> | So far, it was detected in low numbers but expected to be numerous on occasions. More likely to forage and roost in the areas that are subject to flooding |
| Eurasian Bittern | <i>Botaurus stellaris</i> | Likely to be uncommon in the Project area (one individual detected). More likely to forage in the areas that are subject to flooding and close to the ditches |
| Eurasian Golden Plover | <i>Pluvialis apricaria</i> | Probably common in the Project area. There are no observations so far from surveys, but there are numerous records from the area to be set aside (Milvus Group, pers. comm.). |
| Eurasian Spoonbill | <i>Platalea leucorodia</i> | Likely to be uncommon in the Project area (six individuals observed so far, and some other older records). More likely to forage in the areas that are subject to flooding, so its presence can increase if water retention works. |
| Glossy Ibis | <i>Plegadis falcinellus</i> | Likely to be uncommon in the Project area (no observations so far). More likely to forage and roost in the areas that are subject to flooding |
| Great White Egret | <i>Ardea alba</i> | Likely to be relatively common in the Project area. More likely to forage in the areas that are subject to flooding and close to the ditches |
| Grey Heron | <i>Ardea cinerea</i> | Common in the Project area. More likely to forage in the areas that are subject to flooding and close to the ditches |
| Little Egret | <i>Egretta garzetta</i> | Common in the Project area. More likely to forage in the areas that are subject to flooding and close to the ditches |
| Pied Avocet | <i>Recurvirostra avosetta</i> | Likely to be uncommon in the Project area. There are no observations so far from surveys, but older records indicate |

| Species/Habitat | Scientific name | Comments |
|--------------------|----------------------------|---|
| | | that it occurs in the set aside area when there is water. It is likely to breed in the future if water levels are maintained.. |
| Purple Heron | <i>Ardea purpurea</i> | Relatively common summer visitor and passage migrant. More likely to forage in the areas that are subject to flooding and close to the ditches |
| Pygmy Cormorant | <i>Microcarbo pygmaeus</i> | Likely to be uncommon in the Project area (no observations so far). |
| Red-breasted Goose | <i>Branta ruficollis</i> | Likely to be uncommon in the Project area (no observations so far from surveys, but there are some recent records in the area). |
| Ruff | <i>Calidris pugnax</i> | Regular visitor during migration, than can occasionally be recorded in high numbers (Milvus, pers. comm.). |
| Squacco Heron | <i>Ardeola ralloides</i> | Likely to be uncommon in the Project area (one individual observed so far). More likely to forage in the areas that are subject to flooding and especially close to the ditches |
| Whimbrel | <i>Numenius phaeopus</i> | Common in the region during migration, but there are few records in the Project area (and no records from the surveys). This species is likely to roost on the flooded areas during migration and may use the grasslands for foraging. As this species will not likely forage between solar panels, impacts regarding displacement from this habitat need to be confirmed through monitoring. |
| Whiskered Tern | <i>Chlidonias hybrida</i> | Likely to be uncommon in the Project area (no observations so far). |
| White Stork | <i>Ciconia ciconia</i> | Likely to occur throughout the project area based on observations, but more likely to forage in the area that is subject to flooding. |
| Wood Sandpiper | <i>Tringa glareola</i> | Regular passage migrant in the region. It was not recorded during the surveys so far, but there are several records near Graniceri. Its presence may increase as a result of the set aside. |

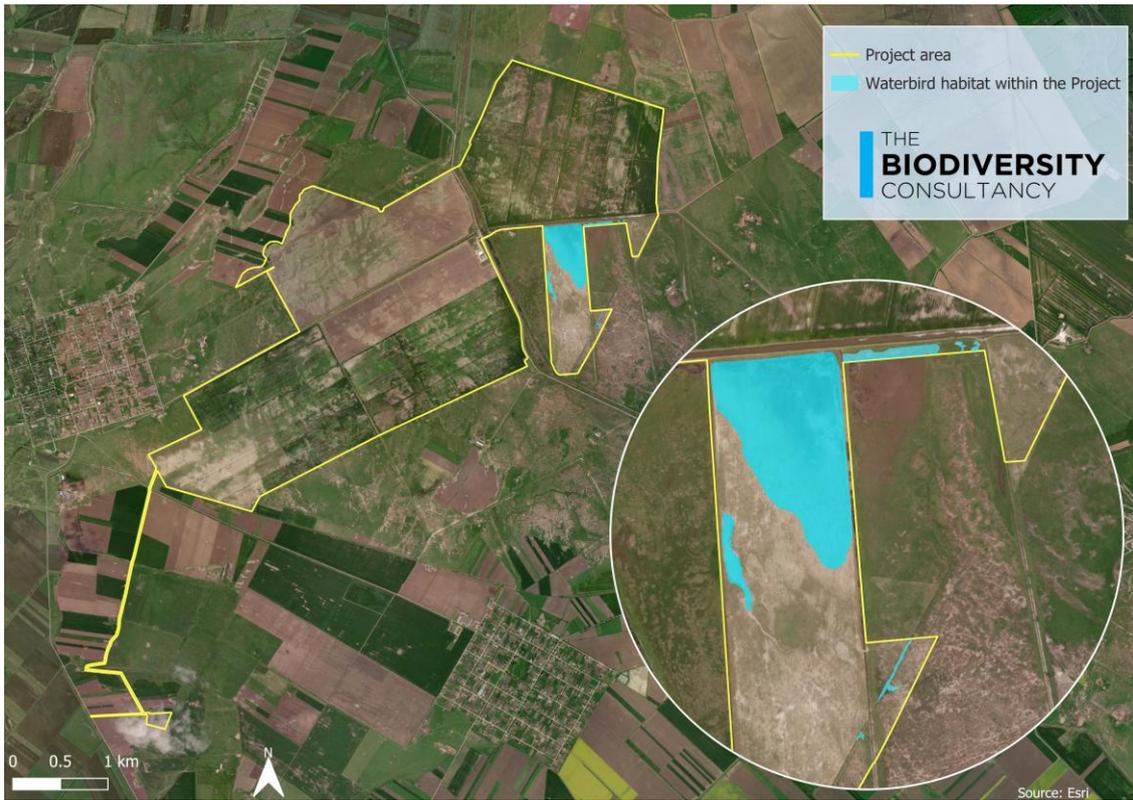


Figure 7: Likely extent of waterbird habitat within the Project area



Figure 8. Drone photography of the site showing regularly inundated land in the foreground supporting waterbirds on 14 November 2024.



Figure 9. Drone photography of the site showing regularly inundated land supporting waterbirds on 14 November 2024. The area of water appears blue (reflecting the sky) while a larger grey area shows the maximum extent of recent inundation, and therefore, the main extent of waterbird habitat mapped in Figure 7 (above).



Figure 10 Drone photography from 14 November 2024 of the Project area north of the waterbird habitat mapped in Figure 7, showing non-inundated cropland.



Figure 11. Google Earth imagery from 27 February 2024 of the set-aside area, showing inundated areas of brown water (red arrows) additional to the main area visualised in Figure 9 (orange arrow, note the area of inundation is smaller on this date compared to Figure 9).



Figure 12. Google Earth imagery from 27 February 2024 of the Project area. The Project area displays a range of visual colours, including salt-affected land (pale patches), areas of higher soil

moisture (darker patches), areas of harvested crops (brown) and areas of perennial grass cover (green). In the Project area, no regularly inundated areas are visible outside of the set-aside area.

Other species are expected to suffer from habitat loss. For example, raptors will lose some foraging habitat, as most species will likely avoid the solar plant. These impacts are discussed below.

Habitat loss for birds of prey

It is likely that prey species density may increase in the Project area as a result of abandoning agriculture and adopting management practices that favour biodiversity (see above). This may be the case for rodents and other ground dwelling mammals, reptiles and small birds. However, most birds of prey, especially the larger species will likely be displaced by the presence of the solar plant (Bennun *et al.* 2021). For these species, the functional loss of habitat may result in abandonment of a territory or of a portion of the territory for resident/breeding species.

In this case, a **territory-based approach** was used to determine the residual impact, which will be the maximum number of territories that could fit within the footprint of the Project (Table 13). This estimate (given as an interval) is based on professional judgement informed by the results of the baseline surveys (ERM 2023b) and ongoing monitoring (Galan & Sandu 2024), data from Open Bird Maps and eBird, and on the information provided by the NGO Milvus. For wintering species and passage migrants, we estimated the number of birds that would be displaced based on the same references mentioned above. The predicted residual impacts also take into account that prey availability will likely increase in the areas of the Project where no infrastructure is present, as well as on the areas that surround the Project, due to management actions that do not involve the use of herbicides and pesticides. The Project is committing to convert hundreds of hectares from arable land to grasslands on the Project site (see Section 8.3). This will translate into an improvement in habitat quality in these areas.

7.2.2 Bird mortality from collisions and electrocution with the OHTL

Most of the power lines belonging to the Project are underground. Only a relatively short section (~50 m) will be above ground and located outside the Natura 2000 SPA.

For bird electrocutions on the transmission line, it is assumed that avoidance through installing underground cables for most of the line, together with impact minimisation measures (see Section 6), will reduce the likelihood of electrocution to close to zero for all species.

Since the overhead transmission line is very short (~50 m) and will be protected with Bird Flight Diverters (see Section 6), which are expected to reduce collisions by ~50% (Bernardino *et al.* 2019). Therefore, bird collision impacts with the OHTL are expected to be negligible.

Table 13: Residual impacts (number of pairs) and recommended offset targets for priority birds of prey considering a No Net Loss target.

| Species | Scientific name | Residual impacts (pairs) | Offset target | Status in the Project Area | Rationale for Residual Impacts |
|------------------------|----------------------------|--------------------------|---------------|---|--|
| Black Kite | <i>Milvus migrans</i> | 0 | 0 | Not detected during surveys so far. There are few records in the region in Open Bird Maps and none on eBird. According to Milvus, the species is very rare in the region or even possibly locally extinct. | The species is not likely to be regularly present in the area. Also, this is an adaptable, generalist species. It usually tolerates infrastructure, and, in some countries, it is common in cities. Even if present, it is not likely to be completely displaced by the infrastructure and may benefit from the expected increase in prey populations. |
| Booted Eagle | <i>Hieraaetus pennatus</i> | 0 | 0 | Not detected during surveys so far. Only one record in Open Bird Maps and non on eBird. According to Milvus, the species is present in low numbers (1-2 pairs) and using the area as feeding habitat. | Since the species is rare and the habitat in the area is considered sub-optimal for this species, as it uses mostly wooded habitats, the residual impacts are predicted to be negligible. |
| Eastern Imperial Eagle | <i>Aquila heliaca</i> | 1 | 1 | Four individuals were detected during surveys so far, always observed crossing the area. There are several records in Open Bird Maps, suggesting regular presence of the species. According to Milvus Group, there are four territories with known nest in the SPA and buffer zone. | Although four individuals were detected during surveys, we estimate that the equivalent of one territory might be lost on account of the Project, because no birds are breeding within the Project areas, and the area is not expected to be the core area of any territory. |
| Eurasian Honey Buzzard | <i>Pernis apivorus</i> | 0 | 0 | One individual was detected during baseline surveys. Also, there is one record in Open Bird Maps. According to Milvus, the species is present in low numbers. | Since this species occupies mostly wooded habitats, and does not usually forage in open habitats, the impact is predicted to be negligible. |
| Greater Spotted Eagle | <i>Clanga clanga</i> | 0 | 0 | Not detected in surveys, so far and there are no records in Open Bird Maps or eBird. Its presence in the area is likely to be occasional. | Since it is considered to be occasional in the area, impacts are predicted to be negligible. |
| Hen Harrier | <i>Circus cyaneus</i> | 0 | 0 | This species was frequently detected during the wintering surveys. Records on Open Bird Maps also confirm that this is a relatively common wintering bird in the region. | The Hen Harrier occurs regularly in the area, and it is likely to be displaced up to some degree by the Project infrastructure. However, this species is likely to benefit from increased prey availability and conservation of the set aside area. Overall, it is considered that the potential gains balance the losses. |
| Lesser Spotted Eagle | <i>Clanga pomarina</i> | 0 | 0 | Not detected in surveys, so far. The species has one record in Open Bird Maps and was flagged by Milvus as potentially present, but according to the | Since the species does not regularly occur in the area and doesn't find its preferred habitat, residual impacts are predicted to be negligible. |

| Species | Scientific name | Residual impacts (pairs) | Offset target | Status in the Project Area | Rationale for Residual Impacts |
|---------------------|--------------------------|--------------------------|---------------|--|--|
| | | | | available information, its presence in the area is likely to be occasional. | |
| Long-Legged Buzzard | <i>Buteo rufinus</i> | 1 | 1 | There are known records in the region, but the species was not detected in in surveys, so far. According to Milvus Group this species breeds in the region and may use the Project area as foraging habitat. | It is unlikely that there are any Long-legged Buzzards breeding in the Project area. However, as the area is likely to be used as foraging habitat by one or more of the pairs that breed in the region, precautionarily it was considered that the equivalent of a territory is lost. |
| Merlin | <i>Falco columbarius</i> | 0 | 0 | Not detected in surveys, so far, but there are some records in Open Bird Maps. | This is a small wintering falcon that feeds mostly on birds. It may be affected by the presence of the solar farm (i.e. some displacement), but because of its small size and behavior it is likely that it will still be able to forage in the areas that have no panels. It is likely to benefit from increased prey availability and conservation of the set aside area. Overall, it is considered that the potential gains balance the losses. |
| Montagu's Harrier | <i>Circus pygargus</i> | 0 | 0 | This species was detected in low numbers during surveys (two individuals), but according to Milvus, 6-9 pairs may be present in the Project general area. | This species breeds on the ground, but it is not likely to breed on regularly plowed or overgrazed land that constitute most of the area. It is likely to lose both foraging and breeding habitat, but it will profit from increased prey numbers and protection on the set aside area, which will likely reduce nest predation and provide safe conditions for colonies to be installed. Overall, it is considered that the potential gains balance the losses. |
| Osprey | <i>Pandion haliaetus</i> | 0 | 0 | The Osprey was not detected during the surveys, and it is not expected to be regularly present in the area. | This species feeds on fish, thus it is not likely to be affected by the Project. |
| Pallid Harrier | <i>Circus macrourus</i> | 0 | 0 | Not detected in surveys, so far. But according to records in the region, this species might be present in low numbers. | This species hunts on the ground and may be displaced by the Project infrastructure. However, it will profit from increased prey availability and from protection on the set aside area. |
| Peregrine Falcon | <i>Falco peregrinus</i> | 0 | 0 | This species was recorded during the surveys in low numbers (two individuals). | Peregrines feed on birds which are caught in flight. They are mildly tolerant of human infrastructure, so the impacts are considered negligible. |
| Red-footed Falcon | <i>Falco vespertinus</i> | 1-2 | 2 | This species was recorded during the surveys in low numbers (two individuals), but may be present in higher numbers, especially during migration | This species does not breed in the Project area, which it uses for foraging. It may benefit from increased numbers of prey but will likely lose foraging habitat as it is displaced by the infrastructure. |

| Species | Scientific name | Residual impacts (pairs) | Offset target | Status in the Project Area | Rationale for Residual Impacts |
|------------------------|-----------------------------|--------------------------|---------------|---|--|
| Saker Falcon | <i>Falco cherrug</i> | 1-2 | 2 | Saker Falcon was detected during surveys (three individuals) and it is likely to be regularly present in the area. | This species does not nest in the Project area but uses it to forage. Although it may benefit from increases in prey populations it will lose foraging habitat through displacement. |
| Short-eared Owl | <i>Asio flammeus</i> | 0 | 0 | This species was not detected during surveys so far, but according to existing data and information from Milvus it is likely present. | This species breeds on the ground, and it is likely to lose both foraging and breeding habitat. |
| Short-toed Snake-eagle | <i>Circaetus gallicus</i> | 1 | 1 | This species was not recorded during the surveys, but according to Milvus, it may be present in low numbers. | This species breeds in trees, so it will not lose breeding habitat, but only some foraging habitat, especially during the post-breeding period. |
| Western Marsh Harrier | <i>Circus aeruginosus</i> | 0 | 0 | This species was recorded in high numbers during surveys, being regularly present in the area. | This species breeds on the ground, and it is likely to lose both foraging and breeding habitat. It is mostly associated with habitats close to water. It will profit from potential increase in prey populations, increased protection in the set aside area and increased protection of aquatic habitats both in the set aside area and the on the ditches. Overall, it is considered that the potential gains balance the losses for this species |
| White-tailed Sea-eagle | <i>Haliaeetus albicilla</i> | 0 | 0 | This species was not recorded during the surveys, but according to Milvus, it may be present in low numbers. | This species breeds in trees, so it will not lose breeding habitat, but only some foraging habitat. It is not likely to be significantly affected by the Project. |

7.3 Natural and Critical Habitats

7.3.1 Methodology

7.3.1.1 *Background*

The direct footprint of all infrastructure components of the Project (Figure 2) was based on the design provided by Rezolv Energy in a .kmz file on 12 December 2024. The impact to terrestrial habitats was calculated by overlaying the Project footprint layer with the ground-truthed vegetation mapping completed in October 2024 (ERM 2024).

The Project area occurs in an area of mostly Modified Habitat including cultivated cropland (both currently used and recently fallow), artificial drains and canals, roads, and scattered houses and farm outbuildings (ERM 2023a). While some of these areas contain vegetation dominated by native species (particularly many of the drains and canals that support wetland flora), vegetation in these areas is considered Modified Habitat as human activity has substantially modified the areas primary ecological functions and species composition (IFC 2012, 2019). The area under the footprint of the solar park was ploughed and cultivated until recently, and it is currently dominated by native weed species based on the studies mentioned in Section 4.1, recent site visits and information provided by stakeholders (refer to Appendix 1).

However, small areas of degraded Pannonic salt steppes and salt marshes, where human activity has not essentially modified the area's primary ecological functions and species composition (IFC 2012, 2019), occur within the Project area but this habitat will be avoided through a set-aside area (Figure 13).

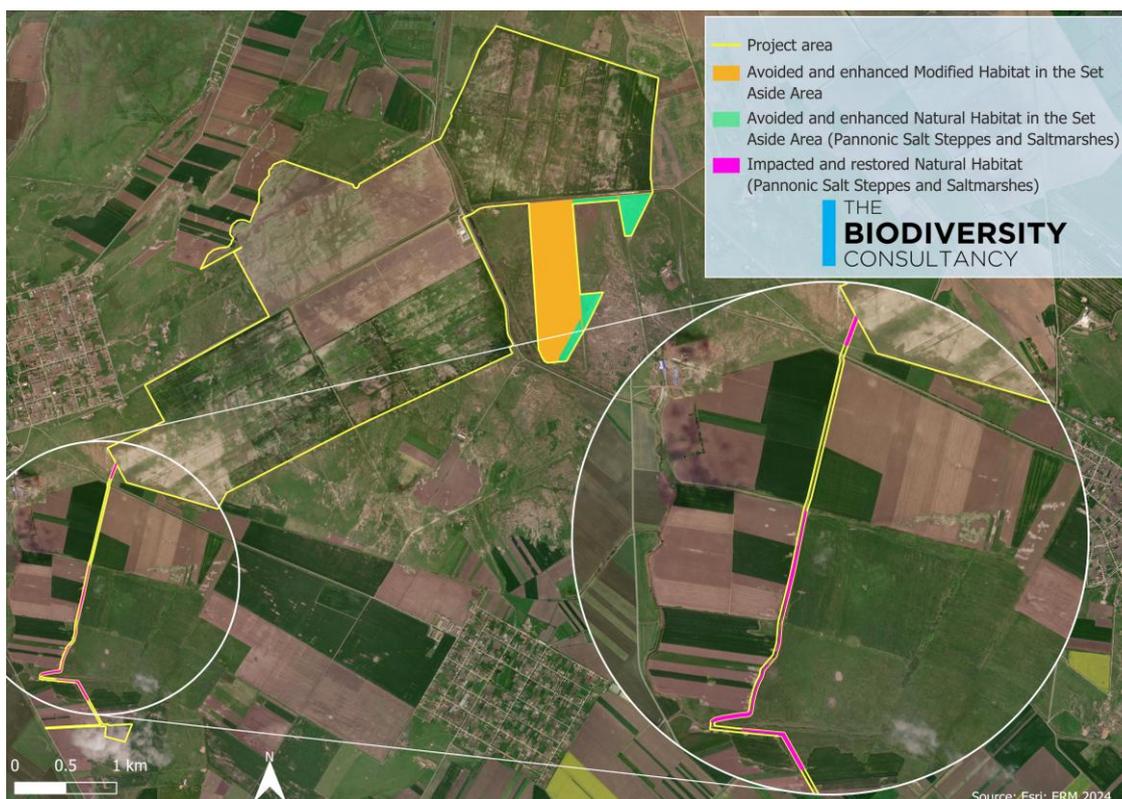


Figure 13. Extent of avoided Natural (Pannonic salt steppes and salt marshes) and Modified Habitat within the Project area (source: TBC, ERM 2024).

Pannonic salt steppes and salt marshes are considered Natural Habitat under IFC PS6 and Critical Habitat under EBRD ESR6.

For the purpose of this RIA, the losses and gains in habitat extent and quality was considered to include the Project components outlined in Figure 2. Drains managed by water authorities are outside of the Project area and were excluded from the assessment.

7.3.1.2 Habitat condition scoring

Habitat 'area × condition' metrics or quality hectares (QH), is a common and widely accepted means to account for habitat complexity through a standardised approach (e.g., Parkes *et al.* 2003; Temple *et al.* 2012). In this metric, a theoretical "benchmark" habitat is considered the highest quality, at 100% condition. A degraded habitat is then considered at a lower percent condition. For example:

- 10 ha of highest possible condition habitat (100% quality) = $10 \times 1 = 10$ QH
- 10 ha of degraded habitat at 50% quality = $10 \times 0.5 = 5$ QH

The habitat condition categories and scores are presented in Table 14.

Table 14. Habitat condition categories, characteristics and scores (TBC unpublished).

| Condition categorisation | Characteristics | Habitat condition scores |
|----------------------------------|--|--------------------------|
| Intact Natural Habitat | Unmodified habitat. Floristic composition in natural state. Native wildlife well represented. Negligible sign of human disturbance. | 1 |
| Largely intact Natural Habitat | Floristic and faunal composition mostly native, primary structure slightly disturbed and with minor signs of human disturbance. | 0.8 – 0.9 |
| Disturbed Natural Habitat | Primary structure altered. Floristic and faunal composition mostly native, with some allochthonous/alien component. Evidence of some human disturbance. | 0.6 – 0.7 |
| Highly disturbed Natural Habitat | Primary structure heavily altered. Floristic and faunal composition includes substantial allochthonous/alien component. Evidence of significant human disturbance. | 0.3 – 0.5 |
| Modified habitat | Anthropogenic area, e.g., human settlements, agricultural crops, tree plantations | 0.1 – 0.2 |

This RIA used the professional opinion of TBC specialists based on the survey data provided in the Baseline Biodiversity Assessment and additional survey report on the Pannonic salt steppes and salt marshes vegetation (ERM 2023b, 2024) to allocate scores of habitat quality/condition which are required in the metric mentioned above. Specific criteria for each habitat condition category will be established within the detailed monitoring protocols (see Section 9).

Based on the baseline information available, the Natural Habitat (Pannonic salt steppes and salt marshes) in the Project area is considered to be between 'highly disturbed' and 'disturbed' (i.e. degraded), and therefore a habitat condition score of 0.5 was used. This matches descriptions in the Project's ESIA and related documents of this vegetation being 'degraded', 'disturbed' or 'largely disturbed' by current and historical agricultural use in the Project area (ERM 2023a, 2023b, 2024). The Pannonic salt steppes and salt marshes in the Project area and mapped as Critical Habitat under EBRD ESR6 (EBRD 2025) by (ERM 2024) is dominated by native species typical of this vegetation community, and the vegetation retains its original low grassland structure. However, it shows evidence of moderate to heavy grazing pressure, with a less-diverse composition of native flora and fauna species than would be expected in pristine examples of this vegetation community. Therefore, a habitat condition score of 0.5 is appropriate.

7.3.1.3 Calculations of Natural Habitat losses

Losses were calculated where Project components overlap with Natural Habitat. Areas of Natural Habitat that were originally proposed to be impacted in the east of the Project area are now proposed to be avoided (17.33 ha), based on the design provided by Rezolv Energy in a .kmz file on 12 December 2024 (Figure 13).

The only remaining Natural Habitat likely to be impacted by the Project occurs along the underground transmission line easement (2.43 ha; Figure 13). However, losses to Natural Habitat

in the underground transmission line easement will be temporary and will occur during construction only. The Project plans to restore all impacted Natural Habitat along the transmission line easement. This will be achieved by the implementation of measures detailed in Section 6.3. Assuming the implementation of these measures, it is likely that the Natural Habitat in the transmission line easement will return to baseline condition within five years following construction, resulting in no permanent loss of Natural Habitat in the transmission line easement.

Assuming the avoidance of Natural Habitat in the solar farm area and the restoration of Natural Habitat in the transmission line easement, it is not anticipated that any residual losses to Natural Habitat will occur in the Project area.

No additional reductions in Natural Habitat quality outside of the Project area were considered in this assessment. Such 'buffers' are sometimes included in RIAs to account for the operational impacts that spread outside a project's footprint. However, TBC experience with other IFC-aligned projects in steppe ecosystems suggests that operational impacts on vegetation quality outside Project area are often minor to negligible in long-term. Given that the infrastructure proposed for perimeter areas of the Project consists primarily of internal perimeter roads and fences, and the Project proposes to implement a 7 m internal perimeter buffer from permanent infrastructure, it is considered unlikely that measurable declines in Natural Habitat quality outside the Project area would occur during the Project's operational phase. Impacts on Natural Habitats outside the Project area during construction are also unlikely for the above reasons, and the habitats would likely recover with time following construction.

The loss of Modified Habitats (there is no Critical Modified Habitat on this Project) is not discussed in this residual impact assessment as there are no IFC PS6 requirements to demonstrate NG or NNL for these habitats (IFC 2012, 2019).

7.3.1.4 Calculations of Natural Habitat gains

Gains were calculated where temporary Project components overlap with Modified Habitat, and where Natural Habitat is avoided or restored. The gains assume the implementation of management actions outlined in Section 8.3.1.

When solar farms are located in areas of Modified Habitat (e.g. intensively-used agricultural land such as ploughed fields) in areas that historically supported natural grassland, it is likely that the cessation of agricultural activity will result in grassland vegetation of at least low-medium quality recolonising the site over time. This recolonising vegetation may be floristically different from the original grassland vegetation, as sensitive species may recolonise very slowly, while disturbance-resilient species may return more quickly. A study of 11 solar farms in the UK revealed that these areas had higher diversity and abundance of plants, butterflies, bumblebees and birds, compared to control sites in nearby agricultural land (Montag et al. 2016). The presence of solar farms in agricultural landscapes is likely to increase the structural diversity of habitats and increase avian diversity overall (Jarčuška et al. 2024).

Therefore, in this RIA we have assumed that all land within the Project area that is currently Modified Habitat and that is subject to temporary construction impacts only (i.e. outside the footprint of permanent Project components such as roads, substations, etc.) is likely to be recolonised by 'disturbed' Natural (grassland) Habitat during the life of the Project. This entails a likely increase in habitat condition score of 0.3, i.e. from 0.2 (Modified Habitat) to 0.5 (highly disturbed Natural Habitat; Table 15) over the entire lifetime of the Project. This assumed increase in habitat condition score and the assumed gains (Table 15) over the entire Project lifetime are considered very conservative, and gains may exceed this, considering the measures described in ACA02 (see Section 8.3.1).

Some recovery of Natural Habitat is also likely underneath the panels (Montag *et al.* 2016), although due to the impacts on the microclimate under PV panels, the likely increase in habitat condition score is assessed as being 0.2, i.e. from 0.2 (Modified Habitat) to 0.4 (highly disturbed Natural Habitat). Recovery of Modified Habitat in the Set Aside Area is likely to be more substantial than recovery inside the solar farm, given that conservation outcomes will be the primary purpose of the Set Aside Area. Conservation actions in the Set Aside Area are detailed in ACA01 (Section 8.3.1), and are likely to result in an increase in habitat condition of 0.4, i.e. from 0.2 (Modified Habitat) to 0.6 (disturbed Natural Habitat).

Areas of Natural Habitat avoided by the Project are also likely to increase in habitat quality assuming the implementation of management actions in Section 8.3.1. This is likely to result from the cessation of the current agriculture-focused grazing regime and the implementation of a more sensitive grazing/biomass reduction regime tailored to support the grassland vegetation, fencing of the site to prevent unwanted stock access, control of invasive weeds, and possible hydrological management to support the Natural Habitat. The likely increase in habitat condition score resulting from such actions is likely to be 0.2, i.e. from 0.5 (highly disturbed Natural Habitat) to 0.7 (disturbed Natural Habitat).

Areas of Natural Habitat impacted by the Project in the transmission line easement are likely to recover in quality following the initial construction impacts if the measures detailed in Section 6.3.2 are implemented, which includes salvage, translocation and restoration of the impacted Natural Habitat. It is likely that the implementation of these measures would result in grassland of a similar quality to that which is currently extant.

7.3.2 Results

Assuming the avoidance of Natural Habitat in the solar farm area and restoration of Natural Habitat in the transmission line easement, there are estimated to be no residual impacts (losses) to Natural Habitat in the Project area.

The Project is estimated to result in an increase in extent of Natural Habitat by 1,006.67 ha relative to baseline levels (before the Project). An **overall net gain of 265.64 QH of Natural Habitat** is expected (Table 15), including:

- 1,006.67 ha of current Modified Habitat (arable fields) within the solar farm area and set aside area being converted to disturbed or highly disturbed Natural Habitat (natural grassland – type to be confirmed), resulting in an increase of 262.17 QH. The type of grassland to be restored within the solar farm depends on the establishment and management methods to be used, and it is to be confirmed by the long-term monitoring (refer to Section 8.3.1).
- 17.33 ha of current highly disturbed Natural Habitat (Pannonic salt steppe and salt marsh habitat) within the set aside area being improved to disturbed Natural Habitat (same habitat), resulting in an increase of 3.47 QH.

The expected gains mentioned above use a conservative approach assuming that restoration to grassland of higher condition (>0.5) may be difficult within the solar farm. Similarly, restoration of the Pannonic salt steppe and salt marsh habitat to 'largely intact' or 'intact' habitat condition (scores ≥ 0.8) may be difficult to achieve.

Modifications to the Project design may affect calculations of residual impacts on habitats and may need to be updated in future versions of the BAP.

Additional conservation actions to deliver an overall NG in biodiversity are presented in Section 8.

Table 15. Residual Impact Assessment calculations of habitat losses and gains in the solar farm area

| Project Component | Baseline | | | | Natural Habitat losses | | Natural Habitat gains | | |
|---|------------------|-------------------|-------------------------|-----------------------|------------------------|------------------------------|---------------------------------|--|-------------------------------|
| | PS6 Habitat Type | Habitat area (ha) | Quality Condition Score | Quality Hectares (QH) | Area (ha) | Loss of Natural Habitat (QH) | Area (ha) | Increase in habitat condition (baseline + increase = target condition score) ²⁴ | Gain in Quality Hectares (QH) |
| <i>Modified Habitat permanently lost to infrastructure</i> | | | | | | | | | |
| Substation | Modified | 3.37 | 0.2 | | | | | | |
| PV case transformers (122 x 110 m ²) | Modified | 1.34 | 0.2 | | | | | | |
| Roads | Modified | 39.42 | 0.2 | | | | | | |
| <i>Modified Habitat temporarily lost to infrastructure</i> | | | | | | | | | |
| Area under panels (37,136 x 124.7 m ²) | Modified | 463.09 | 0.2 | | | | 463.09 | 0.2+0.2=0.4 | 92.62 |
| Solar farm area excluding drains, roads, substation, PV case transformers and the Set Aside Area | Modified | 478.83 | 0.2 | | | | 478.83 | 0.2+0.3=0.5 | 143.65 |
| <i>Natural Habitat avoided and enhanced</i> | | | | | | | | | |
| Pannonic salt steppes and salt marshes in the Set Aside Area - avoided in footprint kmz received 06/12/2024 | Natural | 17.33 | 0.5 | 8.67 | 0 | 0 ²⁵ | 17.33 | 0.5+0.2=0.7 | 3.47 |
| <i>Modified Habitat avoided and enhanced</i> | | | | | | | | | |
| Modified Habitat in Set Aside Area | Modified | 64.76 | 0.2 | | | | 64.76 | 0.2+0.4=0.6 | 25.90 |
| Subtotals (QH) | | 1068.13 | | 8.67 | | Losses (QH) = 0.00 | 1,024.00 | Gains (QH) = 265.64 | |
| | | | | | | | Total gain (QH) = 265.64 | | |

²⁴ Increase in habitat scores relative to baseline vegetation condition will be realised assuming the implementation of measures outlined in Section 8.3.1.

²⁵ No losses of Natural Habitat are expected in the solar farm area, assuming the avoidance of all areas of extant Natural Habitat.

7.4 Legally protected and internationally recognised areas

There are three legally protected or internationally recognised areas overlapping with the Project area (Figure 5). The area of the Project footprint inside each is:

- Câmpia Crişului Alb și Crişului Negru SPA: 1,027.91 ha (2.59% of the total SPA area) excluding the 82.09 ha set aside in the Project area
- Nădab - Socodor – Vărsad SCI: 1,102 ha (13.05% of the total SCI area) excluding the 82.09 ha set aside in the Project area
- Câmpia Crişurilor KBA/IBA: 1,026.91 ha (2.41% of the total KBA area) excluding the 82.09 ha set aside in the Project area

The Project's impacts on the bird qualifying values of these internationally recognised areas are assessed using a species-based approach in Section 7.2 above. The Project's impacts on the habitat qualifying values (Pannonic salt steppes and salt marshes) are assessed in Section 7.3 above.

8 Net gain strategy

8.1 Net gain approach

Infrastructure projects that affect Critical Habitat and/or Natural Habitat use biodiversity offsets and/or other forms of compensation to ensure overall NG or>NNL, in line with IFC PS6 requirements. Offsets should be used as the last resource in the mitigation hierarchy, if significant residual impacts remain after the previous steps (avoidance, minimisation, restoration) have been implemented (e.g. CSBI & TBC 2015). Offsets can include off-site habitat restoration and actions that increase a species' survival or productivity (restoration offsets), and/or measures to stop the ongoing degradation and loss of biodiversity in existing designated sites or sites proposed for designation (averted loss offsets).

The RIA in Section 7 indicates that this Project would not have residual impacts on Pannonic salt steppes and salt marshes habitat, which is classified as Critical Habitat according to EBRD ESR6 and Natural Habitat in line with IFC PS6, and it is also priority Annex I habitat under the EU Habitats Directive. Therefore, offsets or other forms of compensation for this habitat are not required. Nevertheless, Rezolv Energy has made a voluntary commitment to implement Additional Conservation Actions (ACA) to demonstrate NG for the Pannonic salt steppes and salt marshes habitat.

Some residual impacts are predicted on bird species considered priority for being protected under Annex I of EU Birds Directive or listed as being of conservation concern (CR, EN or VU) on the IUCN Red List of Threatened Species or on the national red list, and qualifying as PBFs under EBRD ESR6. Both offsets and ACAs will be used on this Project to compensate for these residual impacts.

8.2 Net gain and offset principles and governance

The offset actions and ACAs included in this BAP follow IFC Guidance Note 6 and recognised GIIP (BBOP 2012; ICMM & IUCN 2013; CSBI & TBC 2015; Ledec & Johnson 2016; IPIECA 2022), including the Business and Biodiversity Offsets Programme (BBOP) offset principles for achieving NNL/NG (BBOP 2012):

- Adherence to the mitigation hierarchy: A biodiversity offset is a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been taken according to the mitigation hierarchy;
- Limits to what can be offset: There are situations where residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected;
- Landscape Context: A biodiversity offset should be designed and implemented in a landscape context to achieve the expected measurable conservation outcomes taking into account available information on the full range of biological, social and cultural values of biodiversity and supporting an ecosystem approach;
- NNL: A biodiversity offset should be designed and implemented to achieve *in situ*, measurable conservation outcomes that can reasonably be expected to result in NNL and preferably a NG of biodiversity;
- Additional conservation outcomes: A biodiversity offset should achieve conservation outcomes above and beyond results that would have occurred if the offset had not taken place. Offset design and implementation should avoid displacing activities harmful to biodiversity to other locations;
- Stakeholder participation: In areas affected by the project and by the biodiversity offset, the effective participation of stakeholders should be ensured in decision-making about biodiversity offsets, including their evaluation, selection, design, implementation and monitoring;
- Equity: A biodiversity offset should be designed and implemented in an equitable manner, which means the sharing among stakeholders of the rights and responsibilities, risks and rewards associated with a project and offset in a fair and balanced way, respecting legal and customary arrangements. Special consideration should be given to respecting both internationally and nationally recognised rights of indigenous peoples and local communities;
- Long-term outcomes: The design and implementation of a biodiversity offset should be based on an adaptive management approach, incorporating monitoring and evaluation, with the objective of securing outcomes that last at least as long as the project's impacts and preferably in perpetuity;
- Transparency: The design and implementation of a biodiversity offset, and communication of its results to the public, should be undertaken in a transparent and timely manner; and,
- Science and traditional knowledge: The design and implementation of a biodiversity offset should be a documented process informed by sound science, including an appropriate consideration of traditional knowledge.

Biodiversity offsets and ACAs are more likely to be feasible in contexts with clear institutional arrangements, good governance and management responsibility, including a high level of stakeholder involvement throughout. This provides a good basis for long-lasting implementation conservation actions. Important design principles for establishing this type of management system approach are:

- Use existing governance structures wherever feasible;
- Ensure any new structures that are created are appropriate to the scale and stakeholders involved;
- Develop downward as well as upward accountability (implementation and financial) for all management structures; and,
- Ensure there is sufficient capacity and technical assistance within the governance and management structures to function efficiently.

8.3 Proposed offsets and additional conservation actions

Offsets and ACAs for this Project have been identified in consultation with Rezolv Energy and key stakeholders. **The proposed offsets are required to achieve>NNL** for priority species, and together with the ACAs, they have the potential to deliver the required gains so that the Project meets its NG commitments for Natural Habitat and priority species. The proposed offsets and ACAs are described below, and additional information on the pre-feasibility of each is included in Appendix 2 of this report.

All offsets and ACAs presented below are fully aligned with the management and conservation objectives of the Natura 2000 sites overlapping with the Project (see Section 4.2.4 and Ministerul Mediului, Apelor și Pădurilor 2016). Based on feedback from the Arad Office of the National Agency for Environment and Protected Areas (ANMAP), none of the activities/measures presented in the management plan for the Natura 2000 sites have been implemented due to lack of resources and guidance from the Government. Therefore, all actions presented in this BAP are additional and will help to promote and enhance the conservation objectives of the Natura 2000 sites overlapping with the Project.

These offsets and ACAs will be evaluated in more detail in the Offset Feasibility Study (OFS), which will confirm locations, specific actions, implementing parties, implementation programme, monitoring of gains, and costs (see Section 8.4.2).

8.3.1 Protecting and enhancing the Pannonic salt steppes and salt marshes habitat

This set of actions have been developed to deliver a NG for Pannonic salt steppes and salt marshes habitat, which is a priority in this BAP. Secondary gains to several priority fauna species are also expected as a result of increased quality of this habitat, and consequent higher breeding and survival rates.

Furthermore, by allowing local shepherds to undertake controlled grazing in grassland of better quality to be restored within the Project site (solar farm and set aside area), the threat from

overgrazing will be reduced in the remaining parts of the two Natura 2000 site overlapping with the Project. Although this could be a significant biodiversity gain provided by this Project, it would be difficult to implement in practice and to quantify. It would involve local shepherds entering into agreements to reduce the number of sheep that graze in the Natura 2000 site outside the Project area in compensation for the grazing allowed inside the Project area. However, there are existing grazing plans until 2027 for the communes overlapping with the Project. Besides, Rezolv Energy would not have control over the grazing levels outside the Project area, and therefore those gains through reducing the grazing pressure in Natura 2000 sites may be difficult to demonstrate.

The two actions below (ACA01 and ACA02) are classified as ACAs rather than offsets because the Project is not anticipated to have any residual impacts on the priority habitat mentioned above. These actions involved design changes post-ESIA, and Rezolv Energy has committed to implementing these actions. The other ACAs in Section 8.3.2 will be subject to further assessment and prioritisation, as explained in Section 8.3.4.

Pannonic salt steppes and salt marshes are influenced by the Pannonic climate with extreme temperatures and aridity in summer. The vegetation is determined by two main factors: water and the amount of salt in the soil and water. This ecosystem is threatened in Europe mainly due to conversion to agriculture and overgrazing, with other threats including abandonment of traditional land management, hunting, eutrophication, lowering of water table connected with river regulations and building of canals, introduction of alien plants and climate change (ŠeffEROVÁ et al. 2008)²⁶.

The proposed actions below involve a combination of activities targeted at reducing or stopping current threats to Pannonic salt steppes and salt marshes habitat in a set aside area, as well as restoration of existing Modified Habitat within the Project site. A gradual increase in habitat quality is expected during the implementation of the activities listed below.

The residual impacts and NG targets are calculated in Section 7.3.2 and Table 15. In summary, the following gains are expected as a result of the Project (Table 16):

- Gain of 3.47 QH by improving the condition/quality of Pannonic salt steppes and salt marshes habitat; and
- Overall gain of 262.17 QH by converting Modified Habitat into a type of natural grassland (type to be confirmed)

A conservative approach has been used regarding the expected increase of quality in the Pannonic salt steppes and salt marshes habitat in the set aside area with the Project site, assuming that restoration to 'largely intact' or 'intact' habitat condition (scores ≥ 0.8) may be difficult to achieve (see ACA01). A similar conservative approach has been used for the restoration of the grassland within the solar farm assuming that a higher habitat condition (>0.5) may be difficult to achieve. The type of grassland to be restored within the solar farm

²⁶ <https://biodiversity.europa.eu/habitats/1530>

depends on the grassland establishment techniques and management measures to be used, and it is to be confirmed by the monitoring (see ACA02 below).

Table 16: Summary of residual impacts and gain targets for Natural Habitats within the Project site.

| Habitat types | Total loss (QH) | Total gain (QH) | Habitat balance (QH) |
|--|-----------------|-----------------|----------------------|
| Pannonic salt steppes and salt marshes | 0 | 3.47 | +3.47 |
| Other type of natural grassland | 0 | 262.17 | +262.17 |
| Total | 0 | 265.64 | +265.64 |

ACA 01: Restoration and enhancement of the habitat in a set aside area within the Project site

A set aside area has been included in the revised Project design after the ESIA. This set aside includes the entire extent of Natural Habitat and waterbird habitat within the Project area (Figure 14). The set aside area is 82.09 ha currently supports degraded Pannonic salt steppes and salt marshes habitat (17.33 ha), and agricultural land (64.76 ha). This area will be improved and maintained for biodiversity conservation. The biodiversity gains will be achieved through conversion of agricultural land to grassland and increase of the condition/quality of the existing grassland.

This action will also benefit priority bird species (including Saker Falcon, Eastern Imperial Eagle, other raptors) through enhancement of prey populations (European Souslik, Common Hamster, other small mammals). The European Souslik prefers the dry, grazed areas and mosaics of grassland with sparse vegetation and bare ground (Attila Nagy, pers. comm.). Engagement with key stakeholders indicates that this measure is the most effective and important amongst all measures that could be implemented.

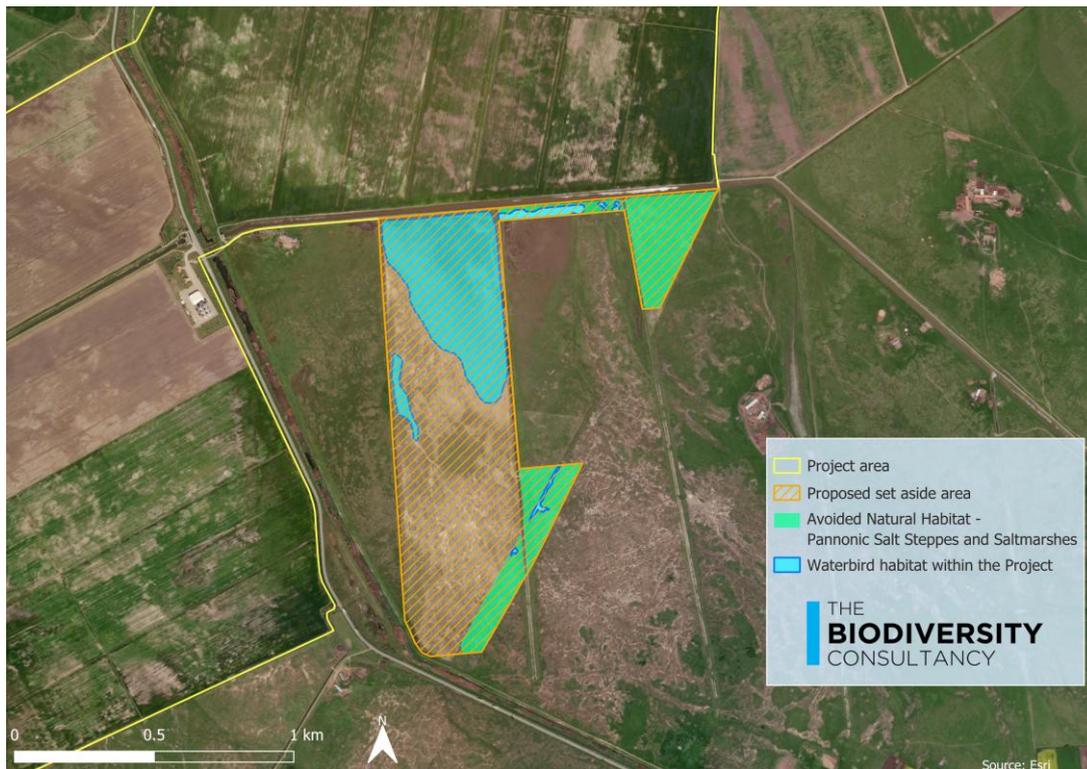


Figure 14: Proposed set aside area within the Project area

Proposed management of the set aside area

Establishment of the grassland:

- An area of 17.33 ha within the set aside area already supports degraded Pannonic salt steppes and salt marshes, which will be enhanced through management measures (see below).
- The remaining area of 64.76 ha (abandoned arable land) within the set aside area will be restored to grassland through a combination of passive (natural colonisation) and active regeneration methods. Natural colonisation is the preferred method as there are large areas nearby that support Pannonic salt steppes and salt marshes.
- Natural colonisation in the abandoned arable land can take at least 5 years, with annual ruderal species (weeds) expected to be abundant in the first 1-2 years (Viszló Levente 2012), K. Havadtoi, pers. comm). If weed species are becoming dominant, then mulching or mowing and removing the biomass should be carried out. Alien invasive plants should be removed by hand/targeted grazing, depending on the species biology and its abundance. As this colonisation process is complex, any management interventions should be informed by the ongoing monitoring and adaptive management (see Section 9).
- Where the natural colonisation is very slow and the resulting species composition poor, active methods will be used including a) mowing parts of the grassland in the 17.33 ha mentioned above or in areas outside the Project, and spreading the hay over the remaining part of the set aside area; and/or b) sowing a seed mixture of native grasses

(including *Festuca pseudovina*) and other species typical of Pannonic salt steppes and salt marshes. It should be noted that mowing will be the favoured method and sowing will only be applied as a last resort if monitoring shows insufficient results of natural colonisation or spreading hay.

- The hay will be cut just before seed ripening (end of July or later), the cut hay will be dried on the site without turning, then collected to avoid losing the seeds, then the chopped hay will be scattered over the area to be restored. It must be ensured that
- Sowing (overseeding) will be used in areas that were ploughed in the past, and will be carried out without soil preparation, maintaining the surface heterogeneity which is an important characteristic of the Pannonic salt steppes and salt marshes habitat. Native seed mixes can be obtained from reliable suppliers (e.g. <https://seedpartner.ro/ro>, Braşov Grassland Institute <https://www.pajisti-grassland.ro>, Hungarian supplier https://vadviragvilag.hu/shop_contact.php) (K. Havadtoi, pers. comm).

Grazing and mowing of the grassland within the set aside area:

- Controlled grazing by sheep in alternation with mowing if necessary. Short grazing period (April to September), grazing not allowed in winter, in flooded areas or in wet periods, low number of animals per hectare (< 5 sheep/ha; Šefferoová et al. 2008). Only one shepherd dog per herd of sheep will be allowed in this area to avoid disturbing and predated on birds, their eggs and on small mammals.
- Low intensity cattle or horse grazing (0.1-1 animal/ha) will be also considered in this area as it could create some disturbance which is necessary to maintain the vegetation mosaic and the halophytic plants typical of this habitat (Šefferoová et al. 2008; K. Havadtoi, pers. comm.). As salt steppes have very low productivity, the Pastoral Management Guide in Romania recommends a grazing intensity of 0.1-0.3 LU/ha²⁷.
- Three-party grazing agreements between Rezolv Energy, Graniceri, Pilu and Socodor communes, and local shepherds to control grazing levels within the Project area and to manage potential conflicts. There are existing grazing plans for these communes until 2027. After that, Rezolv Energy will consider providing support to the commune mayors with the preparation of new and sustainable grazing plans, which would involve reducing the grazing pressure in the Natura 2000 sites overlapping with the Project.
- Through grazing agreements and awareness raising (see ACA 08), Rezolv Energy will work with shepherds to avoid the use of harmful anti-parasitic medicines, such as Ivermectin²⁸, which are very toxic and can contaminate the set aside area (K. Havadtoi, pers. comm.). Alternative medicines that are not toxic can be used instead. If toxic medicines are used, the animals will be kept in enclosures during and after the treatment until the toxic properties have disappeared.

²⁷ https://www.pajisti-grassland.ro/wp-content/uploads/2021/05/Ghid_de_amenajari_pastorale.pdf

²⁸ Ivermectin is harmful for dung-beetles and other invertebrates, because it gets out of the treated animals through their excrements. Detailed information about the effects of Ivermectin and how to avoid them can be found here: [HUN-REN CER research project helps protect wildlife from the harmful environmental effects of ivermectin | HUN-REN](#)

- Mowing is less effective than grazing to manage this type of grassland, although it may need to be implemented in the first two years to control the weeds. To control weeds, mowing should happen before seed ripening of the weeds and the cut biomass should be removed. After this period, controlled grazing should be implemented, with mowing if necessary.
- After the grassland establishment (first two years), any mowing should be limited and only conducted after most plant species have flowered and produced seeds, and ground nesting birds have fled, which is around end of June. Mowing should be avoided in very dry years. The vegetation should be cut a minimum of 10 cm above the soil surface to protect the tussock formation of the dominant grass species (ŠeffEROVá et al. 2008).
- The use of sheep grazing and mowing will be refined by adaptive management, where the results of grassland monitoring are used to help refine the optimum management regimes, including the number of sheep or cattle per hectare.

Water management within the set aside area:

- The measures listed below were successfully used in the restoration of similar habitat in the Hortobágy National Park, Hungary²⁹. However, these measures will require environmental permits or formal approval from Agentia Nationala de Imbunatatiri Funciare (ANIF³⁰). This can be a long and laborious process and therefore the feasibility of these measures is very low.
- Removal of unused ditches and drainage canals, through canal filling and embankment levelling
- Building of water management structures to retain precipitation and salinity e.g. closing inlets and outlets, restoring connectivity between separated marshes, restoration of water levels
- Creation of shallow ponds or small depressions to allow water to accumulate. This measure will be carried out only in the areas that do not support Pannonic salt steppes and salt marshes habitat, and outside the existing waterbird habitat (see Figure 7).

Other measures that will be implemented in the set aside area include:

- Exclusion of nutrient (manure or artificial fertilizer) and herbicide use including input from adjacent fields. Increase in nitrogen content will result in a shift from halophilic species towards generalist species dominance or ruderals (K. Havadtoi, pers. comm.).
- Maintain a mosaic of wet and dry grassland patches.
- Physical removal of non-native invasive plant species, and native weeds. No herbicides will be used in this area.

²⁹ [LIFE 3.0 - LIFE02 NAT/H/008634](#)

³⁰ <https://www.anif.ro/>

- Fencing of the set aside area both along the Project site perimeter, and between the operational solar farm and the set aside area. Wire fencing with 20 cm gaps at the base will be used to allow small mammals to pass through. Dogs and foxes will be prevented to enter this area to avoid affecting ground-nesting birds.
- Planting small patches of native trees characteristic to the region in non-flooded areas to provide nest sites for birds and cavities for bats and other wildlife (see OFF 03). Recommended tree species are Pedunculate Oak (*Quercus robur*), White Poplar (*Populus alba*), Grey Poplar (*Populus alba x canescens*), Black Poplar (*Populus nigra*), and European White Elm (*Ulmus laevis*). Shrubs will also be planted among the trees to increase survival of tree saplings through partial shadowing and protection against grazing. Recommended shrub species are Blackthorn (*Prunus spinosa*), Common Hawthorn (*Crataegus monogyna*), Wild Privet (*Ligustrum vulgare*), and Wild Service Tree (*Sorbus torminalis*).³¹
- Building a bird observation tower by the road on the northern side of the set aside area. This bird observation tower can be used to install nest boxes as proposed in ACA 05.

Pre-feasibility

The commitment to set aside this area for biodiversity conservation will involve a significant financial loss for Rezolv Energy because that area will not be used to produce power over the lifetime of the Project. This financial loss is not included in this pre-feasibility assessment given that the set aside is a design change already committed by Rezolv Energy.

This action involves moderate implementation costs during the grassland establishment (first two years): purchase of seed/hay, sowing, mowing, controlling weeds, monitoring. Water management measures mentioned above are not included in these costs as they are unlikely to be implemented. Similarly, the costs of fencing is excluded as fencing is required for the entire Project site anyway. Long-term implementation costs will be low involving management of grazers, removal of weeds, mowing and overseeding if required, monitoring.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Arad office of National Agency for Protected Areas

ACA 02: Restoration and enhancement of current Modified Habitat within the solar park

³¹ In the case of slow growing tree species (oak, ash), it is preferable that the bushes are planted first, then the saplings of trees should be introduced in small clearcut patches inside the bushy area, and ensure that the bushes don't overgrow the tree saplings until they grow to a height over the bush level. However, if the soil has high salinity, the survival of these woody species will be low (K Havadtó, pers. comm.).

This set of measures will be implemented in the 7 m-wide buffer inside the perimeter fence, 7 m-wide buffers alongside ditches/canals, 3 m-wide spaces between PV panel rows, the locations of the nine substations removed from the original design, and the land under the solar panels. These areas have a total of 941.91 ha and they currently comprise agricultural fields (Modified Habitat). The biodiversity gains will be achieved through conversion of agricultural land to species-rich grassland (Natural Habitat).

Establishment and management of the grassland

The grassland will be created using the approach described in ACA01 above, through a combination of natural regeneration and seeding with a species-rich mix of native grassland species from the local area (seeding will only be implemented if natural regeneration is not showing satisfactory results). Natural colonisation in the abandoned arable land can take at least 5 years, with annual ruderal species (weeds) expected to be abundant in the first 1-2 years (Viszló Levente 2012) ,K. Havadtoi, pers. comm). If weed species are becoming dominant, then mulching or mowing and removing the biomass should be carried out in the first years. Alien invasive plants should be removed by hand/targeted grazing/local herbicide application on the spot), depending on the species biology and its abundance.

Sowing a seed mixture of native grasses (including *Festuca pseudovina*) and other species typical of Pannonic salt steppes and salt marshes will be implemented in case the natural colonisation is very slow and the resulting vegetation cover and species composition poor. The seed mix will include plant species that benefit insect pollinators, including butterflies, bees and bumble bees. Some seed mixes may be especially directed at pollinator enhancement and can contain non-native flowers (such as *Phacelia secunda*). In this case they should only be applied in specific areas, designated for pollinator enhancement. A higher insect abundance will provide the food source for breeding and foraging bird species. The species-rich grassland on the Project site will have a positive effect on the biodiversity of the wider area, including the neighbouring agricultural land, and the Natura 2000 site. Sowing (overseeding) will be carried out without soil preparation, maintaining the surface heterogeneity which is an important characteristic of the Pannonic salt steppes and salt marshes habitat. The seed mix will be obtained from reliable suppliers including those mentioned under ACA01 above.

After the establishment of the grassland (2-3 years), controlled sheep grazing will be used in alternation with mowing in the different parts of the Project site. A low number of sheep per hectare will be used (maximum 5), and grazing will not be allowed in winter, flooded areas or during wet periods. Only one shepherd dog per herd of sheep will be allowed to avoid disturbing and predated on birds, their eggs and on small mammals.

Mowing of the vegetation will only be conducted after most plant species have flowered and produced seeds, which is at the end of June. The use of sheep grazing and mowing will be refined by adaptive management, where the results of grassland monitoring are used to help refine the optimum management regimes (including the number of sheep or cattle per hectare). The use of herbicides will be only for spot treatment of problem weeds.

As mentioned above for the set aside area (ACA01), the control of grazing levels within the Project area and management of potential conflicts will be managed through three party grazing agreements between Rezolv Energy, Graniceri, Pilu and Socodor communes, and local shepherds.

Vegetation management and maintenance will be undertaken during Project's lifetime, although these activities will be more intensive in the first years of operation. Activities will include removal of non-native invasive plant species and native weeds, as well as applying additional seed if necessary. Invasive species are relevant because of large size of site, although salinity is a constraint for these species. Native weeds can still establish on site during/after construction (K. Havadtoi, pers. comm.).

The 7 m-wide buffer along the perimeter fence will be planted with a broader diversity of native plant species to create a biodiverse vegetated buffer. A mix of scattered native trees and shrubs will be planted to increase structural and species diversity. This vegetated and diverse buffer can also represent a visual screen, which will augment community support (Metabolic Consulting 2024). This measure will benefit birds and other fauna species as trees are lacking in the wider area of the Project. Planting taller and dense trees in this buffer is not feasible as it would create shade and reduce the solar radiation reaching the PV panels. These trees may be used by several bird species to build nests and for bats to roost or breed.

Pre-feasibility

This action involves moderate implementation costs during the grassland establishment (first two years): purchase of seed/hay, sowing, mowing, controlling weeds, monitoring. In the Kiskunság National Park in Hungary, the creation of steppe grassland (*Festuca pseudovina*) on arable land involved the cost of machinery work €160 /ha and the cost of seeds €350 /ha (ŠeffEROVÁ et al. 2008). Long-term implementation costs will be low involving management of grazers, removal of weeds, mowing and overseeding if required, monitoring. The maintenance costs of the solar farm will be reduced as the vegetation between and under panels will be grazed by sheep.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Arad office of National Agency for Protected Areas

8.3.2 Offsets and additional conservation actions for residual impacts on birds

This section describes actions that address residual impacts on birds. For species that are considered to suffer residual impacts above negligible level, offsets that aim to fully compensate for these impacts are proposed. These offsets must be implemented so that>NNL/NG is achieved for priority species. Some additional conservation actions are likely to provide gains for priority

species (and others) are also proposed. It is highlighted that some of these actions have a reduced financial and operational cost or require the involvement of several relevant stakeholders, including NGOs and the local community providing opportunities to raise the Rezolv Energy's profile and reputation.

8.3.2.1 Offset targets

Table 17 lists the bird species for which residual impacts were considered above negligible level, and which need offsets in order to achieve NNL (see Section 7).

Estimated annual residual impacts for impacted priority birds of prey were measured in territories lost (or territory equivalent for non-breeding species) converted to number of pairs, and these vary from 1 to 2 pairs per species (see Table 17).

Table 17: Offset targets for priority bird species

| Species | Offset target (number of pairs) |
|------------------------|---------------------------------|
| Long-legged Buzzard | 1 |
| Eastern Imperial Eagle | 1 |
| Red-footed Falcon | 2 |
| Saker Falcon | 2 |
| Short-toed Snake-eagle | 1 |

Regarding these impacts for which the RIA followed an approach based on the number of affected territories/individuals, almost all species' impacts are predicted as 'less than' a certain value. For these species, the NNL target has been rounded up to the next full integer. This conservative approach ensures that gains are likely to exceed a threshold for NNL.

8.3.2.2 Offset options

OFF 01: Installation of nest boxes for Saker Falcon

Between 2010 and 2014, 83 nest boxes for Saker Falcons have been installed on high-voltage pylons as part of a transnational conservation project including Romania. The occupation rate of these artificial nests has been remarkably high (around 50%), contributing to a significant increase in this species population in Romania³².

In 2013, only three pairs of this species were known in Western Romania (breeding in old Raven (*Corvus corax*) nests on powerline poles. Presently, this number has risen to 46 and all the new pairs breed in the artificial nests that were provided through the conservation project. This shows that there is a clear shortage of suitable nest sites in the region (due to the lack of trees

³² <https://milvus.ro/en/artificial-nest-boxes-for-saker-falcons-very-popular/>

and low number of Raven nests). Since the known occupation rate of nest boxes in the region is ~50%, four new nests would be needed to reach the two pairs offset target. The installation of five nest boxes is proposed to account for uncertainty. These nest boxes are made from aluminum (see Figure 15) and will be installed on transmission line pylons in areas close to the Project (<10 km), considered to be good habitat (the exact location of the nest sites will be selected after consultation with local NGOs such as Milvus Group).



Figure 15: Example of Saker Falcon nest box installed in Romania by Milvus Group (photo: [Milvus Group](#))

Pre-feasibility

The implementation risk for this action is considered to be low, since the solution has been tested successfully in the region and there is local capacity of experienced technicians who can undertake the necessary tasks. It requires a partnership or agreement with the company operating the transmission line and a permit from the authorities.

This action will not affect the local people, and it is likely to be generally regarded as a positive outcome.

The estimated costs for acquiring and mounting five nest boxes are approximately EUR 6,500, while the annual costs for maintenance and monitoring are approximately EUR 5,000.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants

- NGOs
- Arad office of National Agency for Protected Areas
- Transelectrica

OFF 02: Installation of nest boxes for Red-footed Falcon

Romania has the biggest Red-footed Falcon breeding population in the EU and the Câmpia Crișului Alb și Crișului Negru SPA is estimated to hold approximately 2% of the national population (Milvus Group, pers. comm.). However, several breeding colonies have disappeared from this area since 2000 because of logging of tree patches and even roadside trees (Milvus Group, pers, comm).

Twenty metal nest boxes will be placed on trees located on known colonies of this species in the Natura 2000 sites that overlap with the Project (Sinmartin and Adea). The exact location will be determined after consultation with local NGOs, such as the Milvus Group. The known occupancy rate of artificial nests provided for this species in the region is much lower than for the Saker Falcon (only 10-15%) because of competition with Jackdaw (*Coloeus monedula*), Common Kestrel (*Falco tinnunculus*) and Long-eared Owl (*Asio otus*) (Milvus Group, pers. com.).

Pre-feasibility

The implementation risk for this action is considered to be low, since the solution has been tested successfully in the region and there is local capacity of experienced technicians who can undertake the necessary tasks. It will, however, require a long-term agreement with landowners.

This action will not affect the local people, and it is likely to be generally regarded as a positive outcome.

The estimated costs for acquiring and mounting 20 nest boxes are approximately EUR 10,000, while the annual costs for maintenance and monitoring are approximately EUR 6,000.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Arad office of National Agency for Protected Areas
- Landowners

OFF 03: Planting trees as potential nest sites for Eastern Imperial Eagle and other raptors

Lack of trees as potential nests sites is considered the most relevant limiting factor for Eastern Imperial Eagle population in the region (Milvus Group, pers. comm.). The lack of trees and continued logging of the few existing ones also likely limit the populations of other tree-nesting priority species: Long-legged Buzzard and Short-toed Snake Eagle.

In order to reach the NNL goal for these species (one new breeding pair of Eastern Imperial Eagle, Long-legged Buzzard and Short-toed Snake Eagle), it is proposed to plant and fence six 20x20 m tree patches using native tree species such as poplar and ash. These patches would be planted from saplings and also with a few larger, containerised trees for faster tree development, reducing the time lag for the gains for the species to be accrued. Eastern Imperial Eagles breed mostly in tall trees, but occasionally, if trees are absent or scarce, can even breed on shrubs, just 2 m above ground (Ferguson-Lees & Christie 2001). Since all three species build bulky, heavy nests, precautionarily, it is assumed that the trees would need at least 10-15 years to reach a height that is suitable for nest installation, and for the gains to be achieved. Since there is an almost complete shortage of potential breeding sites for these species, it is assumed that, if properly located, any tree patches can potentially be occupied by one of these species.

One of the tree patches should be planted within the southern part of the set aside area (within the Project site), and the remaining ones within 10 km of the Project, in locations to be determined after consultation with local NGOs and other stakeholders.

It must be noted that this action will provide additional conservation gains for many other tree nesting birds (such as Lesser Grey Shrike *Lanius minor*), or birds that roost in trees, tree dwelling bats, and other animals.

Pre-feasibility

The implementation risk for this action is considered to be moderate. The solution has been trialled in the region and there is local capacity of experienced technicians who can undertake the necessary tasks, but there is some degree of uncertainty regarding the probability of occupancy by the target species. Also, it is expected that it will take at least 10-15 years for the trees to reach a height that is suitable for nest building.

Although the tree patches are small, they will impose some restrictions on farming and grazing in the area where they are installed.

The estimated cost for planting and fencing six 20x20 m tree patches is EUR 90,000, including maintenance and watering for the first two years (the trees are not expected to need watering afterwards).

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Arad office of National Agency for Protected Areas
- Landowners

8.3.2.3 Additional conservation actions

ACA 03: Installation of artificial nests for Roller

The Roller is a priority species that is not expected to suffer significant impacts from the Project. However, this is a species whose populations are declining, including steep declines in some European countries. In the Project region, this species used to be quite scarce mainly because of lack of natural nesting cavities (Milvus Group, pers. comm.). However, a LIFE project³³targeting this species, has sponsored the installation of more than 800 nest boxes all over the western part of Romania. This has led to relevant increases in the number of breeding pairs in the region, demonstrating that the installation of artificial nests can significantly contribute to this species conservation.

Installation of 20 nest boxes directed at this species, within the Project site (nest boxes can be mounted on poles – trees are not required) and on the planted tree sites (see OFF03) can provide important conservation gains with relatively low investment. This action has the potential for benefiting other species that may use the same nest boxes, such as Little Owl (*Athene noctua*).

Pre-feasibility

The implementation risk for this action is considered to be low. The solution has been successfully trialled in the region and there is local capacity of experienced technicians who can undertake the necessary tasks. The fact that at least some of the nest boxes will be placed within the Project area with restricted access, significantly reduces the chances for vandalism or nest robbing. Other nest boxes can be placed in or near areas where OFF 02 and OFF 03 will be implemented.

This action will not affect local people and it is likely to be generally regarded as a positive outcome. Visits to nest-boxes have a potential to be included in environmental awareness actions (see ACA 08).

The estimated cost of installation for 20 nest boxes will be EUR 5,500, with an estimated annual cost of EUR 4,000 for maintenance and monitoring.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Arad office of National Agency for Protected Areas
- Transelectrica (if some of the nests are placed on transmission lines)
- Landowners

³³ rollerproject.eu

ACA 04: Retrofitting powerlines

a) Electrocution

Existing powerlines can be retrofitted to prevent electrocutions (mainly medium or low voltage distribution lines) through improved insulation and/or increase the physical separation/distance between energized components at the pylons. There are many medium voltage powerlines causing bird casualties through electrocution. Some of these have been retrofitted through LIFE projects. Milvus Group considers the medium voltage power line (1.8 km) depicted in Figure 16 to be the main cause of concern in the immediate vicinity of the Project. This line stretches along the main channel in between the solar panel area and the set aside area. There are several useful guidance documents showcasing good practice for retrofitting power lines (APLIC 2006; Martín Martín *et al.* 2022; BirdLife International & CMS Energy Task Force 2023).

Electrocution in the region affects some of the Project's priority species, including Saker and Red-footed Falcons, Eastern Imperial Eagle, Roller and White Stork. Other species that are regularly affected include corvids, such as Rook and Magpie (*Pica pica*), Common Buzzard (*Buteo buteo*), Sparrowhawk (*Accipiter nisus*) and Common Kestrel (Milvus Group, pers. comm.).

a) Collisions

The installation of bird flight diverters (BFD) can reduce bird collisions by approximately 50%, depending on the species. If this figure is correct. In this case, it is proposed that the above mentioned powerline (Figure 16) be fitted with BFDs (ideally contrasting flappers, see (APLIC 2012; BirdLife International & CMS Energy Task Force 2023). It is particularly important to retrofit this line because it borders with the set aside area that is intended to host thousands of individuals of water birds, belonging to species that are usually prone to collisions such as geese and other waterfowl and waders.

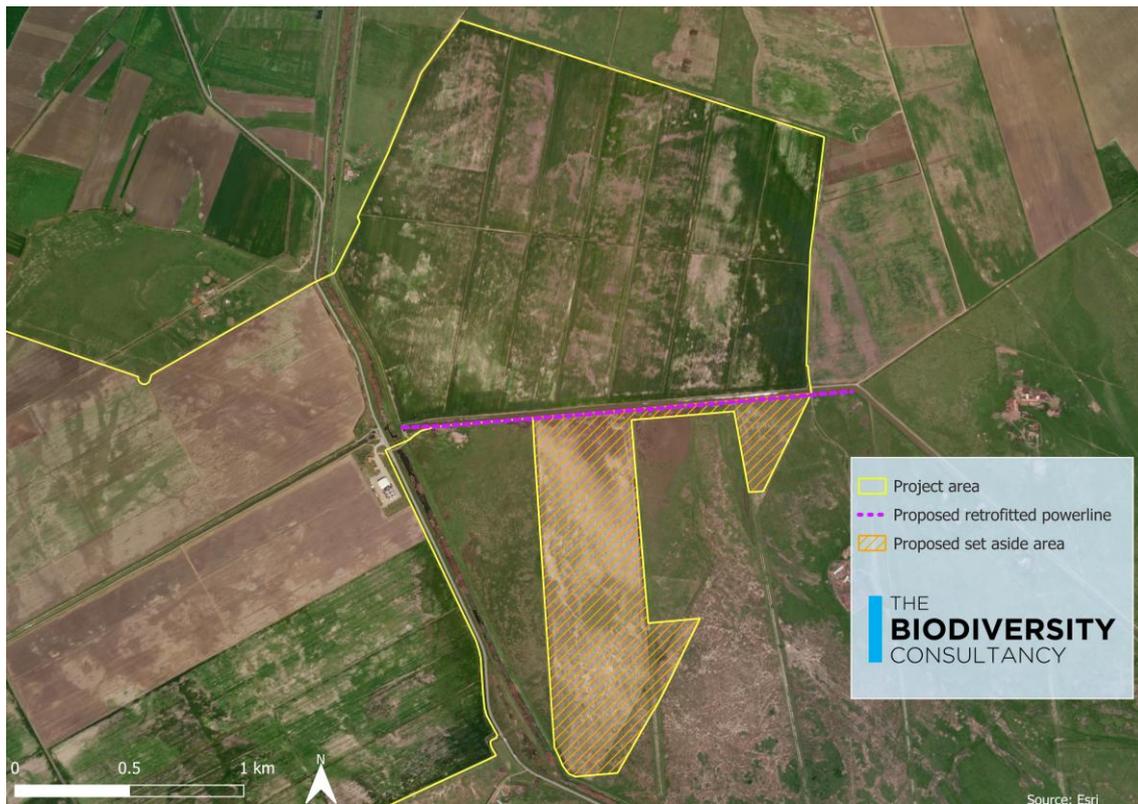


Figure 16: Location of the proposed retrofitted powerline

Pre-feasibility

Isolating pylons and installing BFDs are both widely used and well-established mitigation actions. They have been tested in the region with successful results.

This action requires a partnership/agreement with the company that operates the distribution line. The estimated cost for insulating this 1.8 km line (~30 pylons) is EUR 22,000 EUR (duration of the insulating material is 10-20 years), while the estimated cost for installing BFDs is EUR 8,000.

It should be noted that sometimes BFDs get damaged and need to be replaced, representing an additional cost.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Arad office of National Agency for Protected Areas
- Electricity grid company

ACA 05: Installation of a bat tower

The provision of bat boxes is a widely used conservation measure. Many bat species, such as the priority Noctule Bat (Poulton 2006; Lesiński *et al.* 2009; Baranauskas 2010) and Pond Bat (Baranauskas 2010), rapidly occupy these boxes. This is especially beneficial because the area has been depleted of trees, limiting the access to breeding/roosting sites for these species.

Bat towers, that can hold many individuals have been successfully installed in a similar habitat in Hungary (Janos Mark-Nagy, pers. comm.). Bat boxes included in the bat tower should be designed to accommodate the target species (Rueegger 2016; Pschonny *et al.* 2022). The bat tower should be installed within the set aside area within the Project site. It is possible that this tower could be installed in association with the bird observation tower mentioned in ACA01.

Bat populations in the area should be monitored to ensure that positive outcomes are being accrued by the target species and that no negative effects are felt by other species that may compete with the species using the bat tower.

It should be noted that this action also has potential use for environmental awareness actions (see ACA 08).

Pre-feasibility

This type of solution has been tested successfully in many locations, so implementation risk is low. It will not affect local people and it is likely to be regarded as a positive outcome.

The installation of a bat tower could cost around EUR 4,000 and can last for 15 years. Some annual maintenance and monitoring costs are also to be expected.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Arad office of National Agency for Protected Areas

ACA 06: Expanding the area of the two Natura 2000 sites

The EU 2030 Biodiversity Strategy³⁴ sets a target to legally protect a minimum of 30% of the EU's land areas, and Romania will also have to designate new protected areas (Natura 2000 is an option).

Rezolv Energy could partner with Milvus Group, who has demonstrated interest in this option (and would be in a position to lead the process) to propose an expansion of the Natura 2000

³⁴ https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en

sites that overlap with the Project to the Ministry of the Environment, and the National Agency for Protected Areas. Other NGOs, academic institutions and/or other companies operating in the region could also be partners.

This process would require the identification of areas with good habitat and/or with good restoration potential located in the vicinity of the SPA and SAC. Surveys directed at identifying areas of Pannonic salt steppes and salt marshes in good condition or with good restoration potential would have to be undertaken, as well as some studies directed at identifying potential habitats for the priority species most likely to be affected by the Project. Meetings/workshops with relevant stakeholders will be also needed (other NGOs, academia, other companies operating within the same Natura 2000 sites, environmental authorities).

This action has the potential to generate additional gains to all the priority biodiversity identified in this BAP. The magnitude of these gains will depend on the area that is selected to increment the protected areas, as well as on the management actions that will be implemented.

Pre-feasibility

There is some level of uncertainty regarding the success of this action, because, so far, the Ministry of Environment has not been contacted to inquire on the relevance of this proposal. Also, the process is likely to take a long time, and the positive effects of potential management actions resulting from the reclassification will also involve a long period to be felt. However, the action has the potential to generate long-term gains for all the priority biodiversity features.

Costs are expected to be moderate to high, mostly related to conducting research/surveys to identify the best locations for expanding the Natura 2000 sites, and to organize/attend meetings/workshops with the relevant stakeholders and the environmental authorities.

In general, it will not affect local people, but there may be some restrictions regarding the economic activities that may be implemented if the area is classified as a protected area.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Academic institutions
- Other private companies operating within the Natura 2000 sites
- Arad office of National Agency for Protected Areas

ACA 07: Protect and enhance wetland habitats outside the Project area

The Pannonian Plain, where the Project is located, historically included vast areas of floodplains and marshes, which have been drained and converted for agriculture. The flora and fauna of

these habitats has found refuge partly in secondary habitats such as fishponds and small reservoirs, often created where these wetland habitats used to be.

Within this activity it is proposed that Rezolv Energy would partner with local NGOs (e.g. Milvus Group) and contribute to co-financing a LIFE project proposal for habitat restoration and improvement of the Pannonic salt steppes and salt marshes habitat and wetland habitat envisaging to have the same ecological functions as the historical floodplains and marshes, especially regarding use by waterbirds. These projects are funded up to 75% by the EU, with the remaining being funded by the proponents.

The first step for this action would be to involve relevant stakeholders (municipalities, environmental authorities, landowners, other companies operating in the region, NGOs, academic institutions).

Potential areas to be improved (following consultation with relevant stakeholders) include (Figure 17):

- Mirăţăul Mare (Pilu Fishpond) – a former salt lake which was drained probably in the 1950s. A fishpond was then created on the site in the 1970s with the construction of a dam. The pond ceased to function around year 2000, now being dry for most of the year. The fishpond system consists of one large pond a few small ponds from the former Mirăţăul Mare. These fishponds used to attract very large numbers of waterbirds, especially during migration (Milvus, pers. comm.).
- Mirăţăul Mic – a former salt lake that was drained probably during the same period when the Mirăţăul Mare was drained. It covers an area of about 29 ha, and it is still wet in some periods (Milvus, pers. comm.).
- Socodor and Chişineu Fishpond systems – These fishponds were established during the communist period, converting an area which was mostly pasture and grasslands. The Chişineu Criş fishpond is still in operation, although only 1-2 larger ponds are used mostly for sport fishing. This area used to be an important waterfowl habitat, both for breeding and migration (Milvus, pers. comm.).

Recovering any of these wetlands will provide high biodiversity gains, especially through recovery of Pannonian salt steppes and salt marshes habitat and the provision of habitat for priority waterbird species, ground nesting raptors (such as harriers) and other raptors that are frequently associated with wetlands (e.g. White-tailed Fish Eagle, Osprey, Western Marsh Harrier).

Pre-feasibility

There is some uncertainty regarding the success of this action, as there is high competition for winning LIFE projects. However, NGOs such as Milvus Group have a successful track record in implementing LIFE projects,

The financial cost of this action includes sponsoring the initial stakeholder engagement and the preparation of the proposal (possibly through hiring a professional company to increase the chances of success). It also includes covering at least part of the project budget that is not covered by the EU financing.

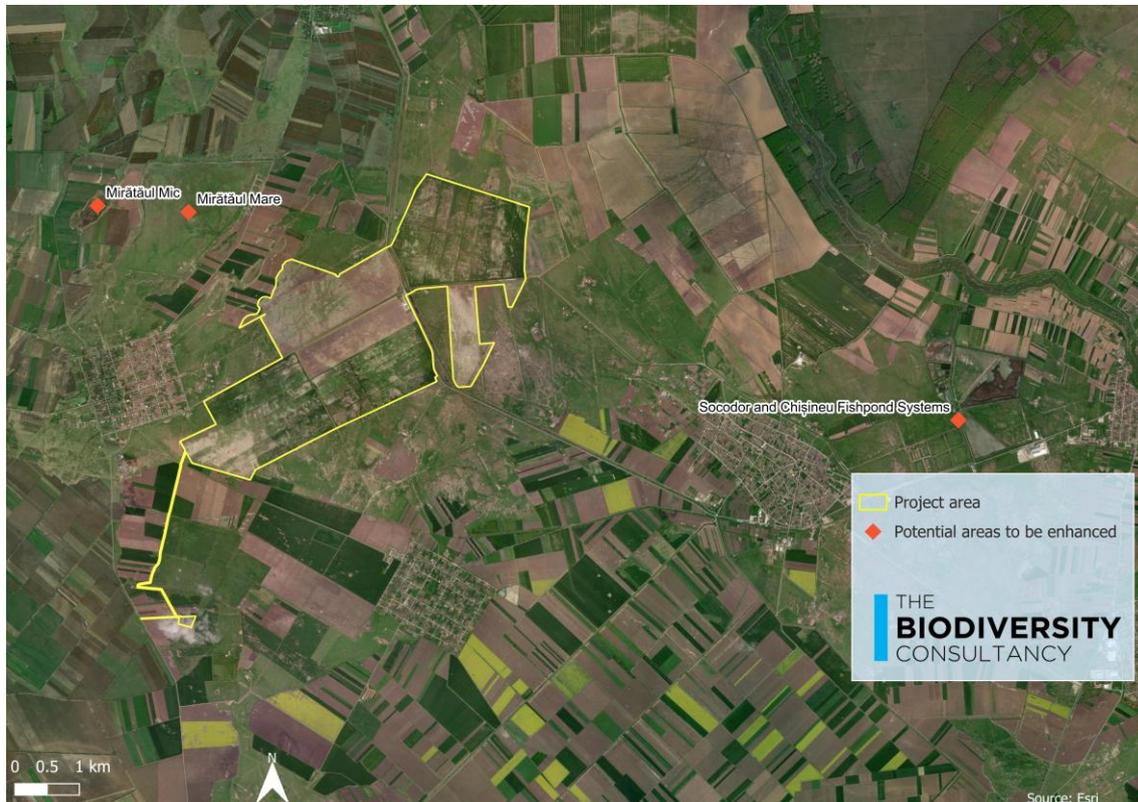


Figure 17: Location of the potential areas to be improved through the development of a LIFE Project.

Key stakeholders and implementation partners:

- Rezolv Energy
- Biodiversity consultants
- NGOs
- Academic institutions
- Other private companies operating within the Natura 2000 sites
- Arad office of National Agency for Protected Areas
- Municipalities
- Landowners
- Fishing associations

8.3.3 Other additional conservation actions

It is good international industry practice for development projects to support conservation actions to contribute to the knowledge and enhancement of biodiversity in the country. These actions can cover a wide range of positive biodiversity interventions, or provide supporting

information to inform future conservation actions, and are not intended to provide measurable gains that can be set against significant impacts.

ACA 08: Research and/or monitoring on priority biodiversity habitats and species

To further the understanding of priority biodiversity values identified in this BAP, Rezolv Energy will consider funding a local/national NGO or academic institution to undertake a program of long-term research or monitoring on Pannonic salt steppes and salt marshes habitat and/or Annex 1 birds within the Natura 2000 sites. This program will focus on some of the priority species listed in Section 4 of this BAP. The focus of this program will be within 10 km of the Project area. However, supporting larger research/monitoring programs that cover wider areas (e.g. Crisana Region) will be also considered.

The output from the research and monitoring program will increase knowledge of those priority species at local/national level and will help to understand population trends and threats, which in turn will inform the establishment and implementation of conservation programmes. The data from this research and monitoring will be shared widely and published, which will contribute to the national and global knowledge and databases on biodiversity. Where existing monitoring programs are being undertaken in the wider area for Project priority species, the Project will also consider support to those programs.

ACA 09: Biodiversity awareness programme

Rezolv Energy will explore funding a biodiversity awareness programme in the wider area of the Project. This programme will be focused on the importance of preserving and enhancing the existing priority biodiversity (as identified in this BAP), and the resulting socio-economic benefits for the local community.

Pannonic salt steppes and salt marshes are threatened in Europe due to conversion to agriculture and overgrazing, with other threats including abandonment of traditional land management, hunting, eutrophication, lowering of water table connected with river regulations and building of canals, introduction of alien plants and climate change³⁵. This programme would be aimed at helping to reduce these threats through increased public awareness.

This programme will involve six awareness raising sessions over a period of two years. These events will be provided in partnership with local stakeholders with relevant experience, and will target schools, hunters' associations and farmers in the villages within 10 km from the Project.

Apart from more general awareness campaigns directed at schools and the general public concerning the importance of the conservation of species and their habitats, the following directed campaigns are relevant:

³⁵ <https://biodiversity.europa.eu/habitats/1530>

- Awareness campaigns directed at hunter organizations to advocate for responsible hunting practice (e.g. not shooting raptors, not using poison for predator control, not shooting Rooks, which provide nests for Red-footed Falcons)
- Awareness campaigns directed at farmers regarding the following subjects: use of poison to control rodents; the excessive use of pesticides; different techniques for soil preservation; and climate, water supply and biodiversity. Additional subjects may be considered if relevant.

8.3.4 Pre-feasibility assessment of proposed offsets and additional conservation actions

The offset and additional conservation actions presented above were further explored as to their potential to deliver biodiversity gains and feasibility, through engagement with Rezolv Energy, in-country stakeholders, a site visit, and a BAP workshop.

The following aspects and criteria are considered in this pre-feasibility assessment:

- Proposed area (location and size)
- Priority biodiversity values
- Actions to be implemented for the offset
- Expected gains
- Technical feasibility (including likelihood of demonstrable gain)
- Social feasibility
- Political feasibility
- Governance feasibility
- Financial feasibility
- Key implementing partners and other relevant stakeholders

The above criteria have been given a score (scale 1-5), with lower scores indicating areas of higher risk that the proposed offset or ACA will not deliver the intended outcome of a NG for the relevant feature. Summary scores for all offset and ACAs are provided in Table 24, Table 25 and Table 26 in Appendix 2.

To accrue the required gains for the Project to achieve NNL/NG for biodiversity according to IFC PS6 all the offset actions presented in Section 8.3 need to be implemented. The pre-feasibility assessment has found all these offset actions to be feasible in principle.

Based on this pre-feasibility assessment, all ACAs are also considered to be feasible in principle. ACA01 and ACA02 are already commitments by Rezolv Energy, and the other ACAs presented in Section 8.3 will be prioritised based on: pre-feasibility scores (Appendix 2); stakeholder feedback; outcome of full Offset Feasibility Study; and Rezolv Energy's priorities and budget.

The offsets and ACAs that are likely to be feasible, as assessed in this pre-feasibility assessment, will be evaluated in more detail in an Offset Feasibility Study (see Section 8.4.2), taking into consideration that the proposed offsets (or similar) will be required to achieve NNL for priority species.

8.4 Roadmap for BAP update and offset development

This section includes a 'road map' of next steps needed to finalise the BAP and to further develop the feasibility study for the offsets listed above.

8.4.1 Update of BAP

This BAP incorporates stakeholder feedback obtained during the BAP workshop in December 2024 and other forms of engagement between October 2024 and January 2025. The Final BAP also incorporates the comments from the stakeholders who reviewed the Draft BAP.

During the implementation of the Project, the BAP should be updated regularly to incorporate:

- Changes in the Project design
- Significant findings from the biodiversity monitoring
- Progress with the offset implementation and gains achieved

Further BAP revisions and related documents (see below) should be prepared by biodiversity consultants with the appropriate expertise in biodiversity conservation and experience in delivering documents that are aligned with GIIP and IFC PS6 compliant.

8.4.2 Detailed offset feasibility study (OFS)

This BAP presents several offset options and ACAs, which would collectively deliver the Project's NG commitment for all priority habitats and species. These actions would require additional investigations as part of the OFS. The OFS will be prepared by biodiversity consultants with IFC PS6 experience, together with local biodiversity specialists.

For each action, the OFS should:

- Confirm the locations and areas to be covered by the offsets and ACAs;
- Determine in detail the actions that will occur to deliver the required gains for target features;
- Describe the monitoring required to demonstrate the level of gains achieved by the action;
- Confirm the implementing party/parties, any other relevant organisations and the governance structure of the action; and,
- Estimate costs, and identify any other support required, to effectively implement the actions and required monitoring.

For the final set of agreed actions, Rezolv Energy and the implementing partners should agree on:

- The scope of support – i.e., level of funding, time period, responsibilities; and,
- A set of financial and management indicators to demonstrate that the action is functioning as intended and likely to deliver the assumed gain.

8.4.3 Biodiversity Offset Management Plan

Following final agreement on offset actions and ACAs, a Biodiversity Offset Management Plan (BOMP) will be prepared to describe the specific activities of implementing, managing and monitoring the offsets and ACAs. The BOMP should be prepared by biodiversity consultants with IFC PS6 experience, together with local biodiversity specialists.

The BOMP should ideally be produced and offset implementation should start prior to the start of construction. However, as construction of this Project is planned to start soon after financial close, and offsets are long-term actions outside the Project affected area, the development of the BOMP may need to continue after the start of construction.

The BOMP will include the management of all final and feasible offsets and ACAs. The BOMP will have specific objectives and actions, with targets, indicators and responsibilities for each action.

8.4.4 Biodiversity Management Plan

A Biodiversity Management Plan (BMP) is a practical document detailing all mitigation measures to be implemented during the pre-construction, construction and operational phases. The BMP will be prepared before the start of construction, and it will include a description of the mitigation measures, implementation schedule, responsible parties, and the key performance indicators to verify their implementation. The mitigation measures will be aligned with those summarised in Section 6 of this BAP, with further detail provided in the ESIA (ERM, 2023a). The BMP will be prepared by suitably qualified biodiversity consultants.

8.4.5 Full Biodiversity Monitoring and Evaluation Plan

A BMEP Framework is provided in Section 9 and Appendix 3 of this BAP. A full BMEP (including detailed monitoring protocols, programme and costs) will be prepared before the start of construction. The full BMEP should be prepared by biodiversity consultants with IFC PS6 experience, together with local biodiversity specialists.

9 Biodiversity Monitoring and Evaluation Plan Framework

This Biodiversity Monitoring and Evaluation Plan (BMEP) Framework sets out the framework, indicators, approaches and programme that the Project will use to track changes in biodiversity across the construction and operation phases, and to evaluate whether the lender requirements are fulfilled.

The monitoring framework in this BMEP uses standard monitoring practice to assess the effectiveness of biodiversity management actions, the “Pressure – State – Response” framework (Figure 18) which uses ‘indicators’. Indicators are measures that enable the Project and Project Company to track progress towards the biodiversity goals.

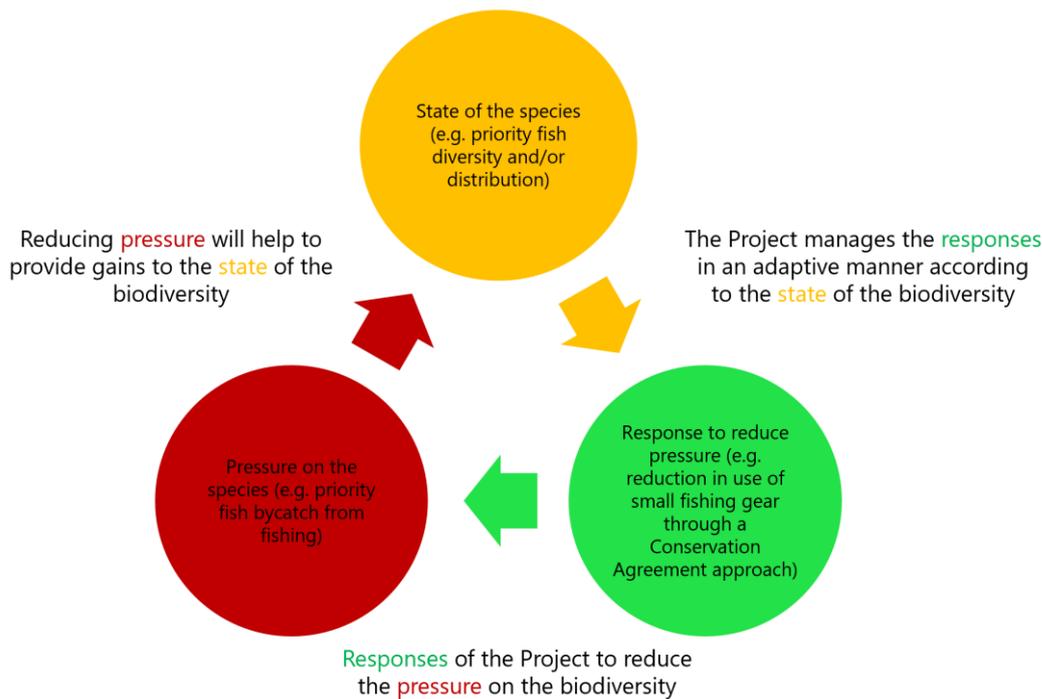


Figure 18. State-Pressure-Response Framework

Three indicator types are used:

- **State indicators** refer to the population and distribution of species or the extent and condition of habitat in the monitoring locations. State indicators are fundamental as they are most closely linked to the Project biodiversity goals. However, significant impacts on biodiversity can take a long time to become measurable and are subject to external influences beyond the control of the Project (e.g. climate). It is thus also important to assess pressure and response indicators since they can usually be assessed more easily.
- **Pressure indicators** identify and track the major threats to biodiversity that the Project may or may not affect. Pressure indicators are particularly important as they are simpler to measure and often respond more rapidly than state indicators when the responses are adapted. Monitoring pressure can often be done more precisely and can, therefore, provide more timely information to inform the adaptive management.
- **Response indicators** identify and track management actions: for example, tree survival rates to monitor the success of habitat restoration, or bird mortality to monitor the effectiveness of bird flight diverters. Response indicators are usually the easiest to measure, as they track the management actions undertaken by the Project. However, their success is not always linked to the achievement of the objectives.

An effective monitoring programme is, therefore, a mix of indicators: response indicators to track whether mitigation actions ('responses') have been implemented, pressure indicators to give a timely indication of whether mitigation actions are having an effect, and state indicators

to track the condition of priority biodiversity, which requires the highest level of assurance that mitigation actions are having the intended outcomes.

Monitoring requires thresholds for pressure and state indicators. Thresholds are agreed values of indicators designed to signal to the Project that progress towards biodiversity goals may be deviating from expected levels (Figure 19).

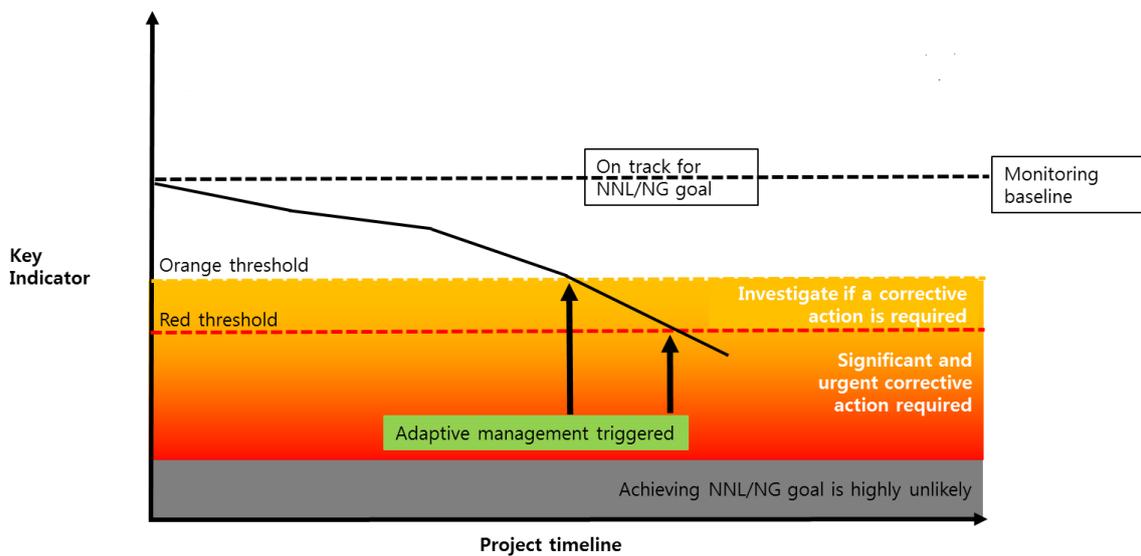


Figure 19. Concept of indicator thresholds and adaptive management

The identification of threshold values can be difficult as it requires a high level of understanding of the degree of natural variation in the features being monitored. Hence, the development of thresholds is an iterative process that will be refined over time based on monitoring results. Adaptive management actions are triggered when a threshold is crossed, enabling the Project to quickly respond to negative changes and implement solutions. Two threshold levels have been defined for this Project:

- **Orange:** Breaching this threshold is a warning to the Project that mitigation activities may not be working. Triggering the orange threshold should lead to a review of mitigation and monitoring efforts to understand the nature of the problem, and if necessary research or adapt the type or intensity of mitigation actions.
- **Red:** Triggering this threshold is an urgent warning to the Project that efforts to achieve biodiversity goals may be significantly awry. Remedial and/or different mitigation actions are likely to be immediately required.

One of the aims of adaptive management, in the context of this document, is to quickly and flexibly respond to negative changes in the status of a priority feature, and to experiment with solutions in an intelligent framework that makes it possible to learn quickly from successes and mistakes.

This BMEP Framework covers the entire Project footprint including the set aside areas. The Framework also includes high-level information on the monitoring and evaluation in offset areas

and ACAs because exact implementation areas and final associated offset actions have not been defined yet. Likewise, the framework does not include detailed monitoring protocols for methodologies that will also need to be developed in the future in the full BMEP or a separate document.

The biodiversity monitoring on this Project will focus on the priority biodiversity features identified in Section 4 of this BAP.

Monitoring and evaluation activities will be undertaken throughout the whole operational life of the Project (25 years) for some features and for a shorter duration for other features. The shorter monitoring duration for some features takes into consideration the fact that most operational impacts are expected in the first years of operation. In case no significant changes are detected in that period, then it is not proportionate to continue the monitoring for the entire life of the project. Should significant changes be detected during the periodic evaluations or at the end of the planned monitoring period, then the monitoring may need to be extended. The frequency of monitoring will also vary depending on the priority biodiversity feature being monitored. The monitoring duration and frequency of the distinct monitoring activities is also presented in Appendix 3.

10 BAP Implementation

10.1 Roles and responsibilities

The principal roles and responsibilities for the implementation of this BAP are outlined below. As the Project moves towards operation, additional plans may be required to operationalise the commitments made in this BAP. For example, the responsibilities of the EPC Contractor will be detailed in the BMP (see Section 8.4.4). The responsibilities for the offset actions (Section 8.3) will be specified in the OFS and BOMP.

The Project Company's Environmental Manager will have overall responsibility for 1) coordinating the implementation of the BAP; 2) coordinate subsequent BAP updates after the Final BAP; and 3) communicate the BAP requirements to all relevant Project personnel and contractors. The Operations Manager will ensure that all parties comply with the requirements set out in this BAP, and will approve sufficient resources for the implementation of the BAP.

The biodiversity mitigation measures described in the ESIA and summarised in Section 6 of this BAP will be integrated and detailed into the BMP and the Construction Environmental Management Plan (CEMP) to be developed and implemented by the EPC Contractor. The Environmental Manager of the EPC Contractor will be responsible for the implementation of the construction and site-related mitigation measures, and they will report to the Project Company's Environmental Manager.

The key to a successful BAP is the continuous monitoring of its actions and evaluation of their effectiveness in meeting the BAP objectives. Rezolv Energy will employ a suitably qualified

biodiversity specialist to monitor whether the specific actions in the BAP are being implemented and highlight requirements for adaptive management.

Annual reports on the BAP implementation will be prepared and made available to regulatory bodies and financing parties, and to other key stakeholders as appropriate. .

Rezolv Energy will also consider sharing biodiversity data (those collected during surveys and monitoring) with the Global Biodiversity Information Facility (as recommended by Equator Principles 4³⁶).

10.2 Budget considerations

The actual budget will be developed separately by Rezolv Energy. Some indicative costs for offset actions and ACAs are provided in Section 8.3. The OFS will include more detailed costs for the offset actions and ACAs which are selected.

Table 18 includes a list of the main cost categories for the biodiversity studies and implementation of biodiversity plans.

Table 18. Cost categories for offset studies and implementation.

| Cost category | Comments |
|--|--|
| BAP updates | Additional or regular updates of the BAP (after the Final BAP) are likely to be required in the future (see Section 8.4.1). Further BAP revisions will be prepared by international biodiversity consultants with IFC PS6 experience, which will be appointed by Rezolv Energy. |
| BMP preparation | The BMP will be developed by suitably qualified biodiversity consultants to be appointed by Rezolv Energy (see Section 8.4.4). |
| Implementation of the biodiversity mitigation measures during construction | The costs for biodiversity mitigation measures during construction will be included in the EPC Contract. |
| Offset Feasibility Study (OFS) | The full OFS will be developed by biodiversity consultants with IFC PS6 experience, which will be appointed by Rezolv Energy (see Section 8.4.2). |
| Biodiversity Offset Management Plan (BOMP) | The BOMP will be developed by biodiversity consultants with IFC PS6 experience, together with local biodiversity specialists (see Section 8.4.3). The consultants will be appointed by Rezolv Energy. |
| Offset implementation | These costs will be estimated in the OFS. |
| Full BMEP | A BMEP Framework is provided in Section 9 and Appendix 3 of this BAP. A full BMEP (including detailed monitoring protocols, programme and costs) will be prepared before the start of construction (see Section 8.4.5). The full BMEP will be prepared by biodiversity consultants with IFC PS6 experience, together |

³⁶ <https://equator-principles.com/about-the-equator-principles/>

| Cost category | Comments |
|----------------------------|--|
| | with local biodiversity specialists. The consultants will be appointed by Rezolv Energy. |
| Implementation of the BMEP | The costs of implementation will be provided in the full BMEP. The costs will include long-term monitoring in the Project area and in offset areas and ACAs. Rezolv Energy will provide the funding for the long-term monitoring, while some monitoring requirements will be included in the BMP under the responsibility of the EPC Contractor. |

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Appendix 1 Stakeholder engagement

1 Rationale and requirements for biodiversity stakeholder engagement

Stakeholders are persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. Most companies undertake stakeholder consultation during the planning phase of a development project. However, stakeholder engagement is a broader, more inclusive, and continuous process between a company and those potentially impacted, which encompasses a range of activities and approaches, and spans the entire life of a project (IFC 2007).

Stakeholder engagement is necessary to validate the biodiversity baseline information, predicted impacts and the mitigation measures proposed by a project. It is good practice to show that the feedback received from stakeholders is recorded, considered, and reflected in project documents where appropriate. Early engagement can help identify biodiversity values that are important to stakeholders, and local knowledge can reveal important information relevant to the biodiversity values within the project area of influence, and the dependence/use of this biodiversity value and/or ecosystem services by project-affected communities (Gullison et al. 2015). Local stakeholders may have a greater appreciation than external technical experts of the biodiversity values in the Project area and their sensitivity to impacts. It is good practice to document perceived impacts, even if they appear technically unfounded (Hardner et al. 2015).

There are specific regulatory and lender requirements that highlight the importance of engaging with stakeholders throughout the implementation of a development project.

Paragraph 20 of IFC PS6 requires that developers should 'consult protected area sponsors and managers, Affected Communities, Indigenous Peoples and other stakeholders on the proposed project'. IFC Guidance Note 6 (IFC 2019) states that 'stakeholder engagement and consultation is required for all projects located in legally protected and internationally recognized areas'. The IFC requirements for stakeholder engagement are described in Paragraphs 26–33 of IFC PS1 and relevant paragraphs in Guidance Note 1.

The EU guidance on Appropriate Assessments for projects affecting Natura 2000 protected sites highlights the importance of gathering information from stakeholders during this process, in order to confirm impact significance, identify project mitigation and alternatives (European Commission 2002).

Under the national legislation, the stakeholder engagement and consultation requirements for EIAs and SEAs are specified in Law no. 292/2018 and Government Decision no. 1076/2004. Public consultation on Adequate/Appropriate Assessments is covered by the EIA/SEA legislation mentioned above (Ministerul Mediului, Apelor și Pădurilor 2023).

Engagement with stakeholders is also necessary in the design and implementation of biodiversity offsets. Amongst the principles for offset design defined by the Business and Biodiversity Offsets Programme³⁷ (BBOP), the following are relevant to stakeholder engagement and participation:

- In areas affected by the project and by the biodiversity offset, the effective participation of stakeholders should be ensured in decision-making about biodiversity offsets, including their evaluation, selection, design, implementation and monitoring.
- A biodiversity offset should be designed and implemented in an equitable manner, which means the sharing among stakeholders of the rights and responsibilities, risks and rewards associated with a project and offset in a fair and balanced way, respecting legal and customary arrangements. Special consideration should be given to respecting both internationally and nationally recognised rights of indigenous peoples and local communities.
- The design and implementation of a biodiversity offset, and communication of its results to the public, should be undertaken in a transparent and timely manner.

Stakeholders may be affected positively by enhancing biodiversity values in the offset sites, or negatively by altering land use practices and/or restricting use of biodiversity values. Targeted stakeholder consultation will be very important to ensure the success of offsets (Hardner et al. 2015).

2 Methodology for stakeholder identification and prioritisation

Biodiversity-relevant stakeholders include communities, individuals, companies, organisations or institutions, which can be grouped into four broad categories:

- A. Stakeholder who rely on biodiversity or natural resources upon which the Project may or will have an impact, for a portion or all of their livelihood.
- B. Stakeholders who have decision making power over financial, natural, or human resources, geographical areas, relating to biodiversity.
- C. Stakeholders who hold specialist knowledge or experience in biodiversity issues in the Project area or in the wider area.
- D. Stakeholders who have an interest in, or engage in, environmental or conservation issues in the Project area or in the wider area.

The following types of stakeholders may be relevant to the biodiversity baseline: community groups, recreational users within the baseline study area, hunters/fishers, farmers, governments, scientists and academics not serving as expert advisors, NGOs that are locally active on the issues of biodiversity, community development, and other related concerns. Consultation with

³⁷ <https://www.forest-trends.org/bbop/bbop-key-concepts/biodiversity-offsets/>

experts plays a critical role in developing robust biodiversity baselines, particularly where there is little published literature (Gullison et al. 2015). Biodiversity experts can be found in:

- Relevant government agencies (protected areas, agriculture, land-use planning, forestry, environment, etc.)
- Science-based conservation organizations, including those with relevant online information and small local NGOs, which may have useful local knowledge
- Universities or research institutions (universities, museums of natural history, herbaria, conservation data centers, IUCN Specialist Groups, etc.).

For the purpose of the stakeholder prioritisation for this Project, biodiversity-relevant stakeholders have been arranged into the following groups:

- Government ministries and agencies
- Local public administration
- Local communities
- Non-governmental organizations (NGOs) and community-based organizations (CBOs)
- Universities, research institutes, and independent experts
- Private sector (industries/companies present in the area or having a stake in the area)
- Lenders

Identified stakeholders were prioritised by assessing the level of interest and the level of influence/power that each has over the Project. The power-interest matrix is a commonly applied tool in stakeholder management (Oguz 2022) and it uses the following parameters to assess and categorise stakeholders as either High or Low :

- Stakeholder's interest in Project-related biodiversity issues. This is the extent to which a stakeholder may have concerns about the way the Project manages biodiversity. In the case of individuals, this may relate to their level of dependency on biodiversity and ecosystem services. For an organisation or institution, it may relate to jurisdictional relevance (e.g. a specific conservation NGO may be categorised as High)
- Stakeholder's power over Project-related biodiversity issues. This is the extent to which a stakeholder may influence the way that the Project manages biodiversity, including for political, economic and/or legal reasons.

Both parameter values were then combined to obtain the four biodiversity stakeholder priority categories, as shown in Figure 20.

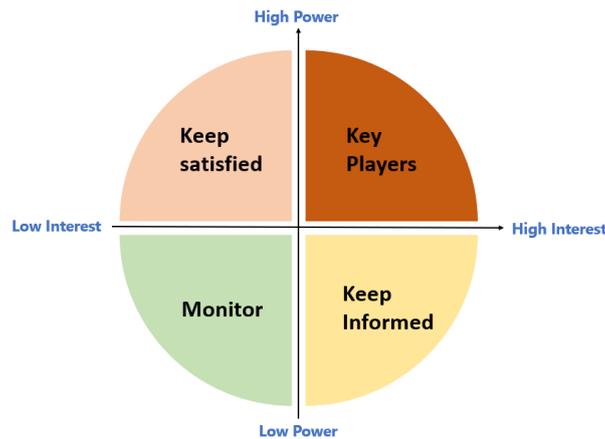


Figure 20. Stakeholder categories based on interest and power towards Project-related biodiversity issues (adapted from Oguz 2022)

The parameter values (High / Low) and the related stakeholder priority categorisation were preliminary estimates based on TBC's understanding of the Project, and the way stakeholders are believed to be linked to biodiversity risk and opportunities at the time of preparation of the present document. It is worth noting that the stakeholder parameter values and the biodiversity specific categorization of stakeholder may change over time depending on Project management of biodiversity issues, as well as on external factors (e.g. social, economic, political, amongst others), which may influence stakeholders' position towards biodiversity issues and the project in general. Stakeholder mapping is an interactive process that should be frequently reviewed to track any changes in stakeholder context.

The four stakeholder priority categories can be understood as follows:

- 1) **Key Biodiversity Players:** Stakeholders who have both a high level of interest in the project and a high level of influence and power over project outcomes. These are stakeholders with the highest level of engagement. They will be consulted individually on specific aspects when required, and they can also be included in regular Project stakeholder meetings and workshops.
- 2) **Keep Informed:** This category of stakeholder has a high level of interest in the Project but has a lower level of influence or power to control Project outcomes. These stakeholders will be kept informed of Project progress through regular stakeholder engagement meetings (where relevant), project newsletters, and workshops.
- 3) **Keep Satisfied:** This category of stakeholder is perceived to have a lower level of interest in the Project, but a high level of influence or power over Project outcomes. It is expected that engagement of this group will be managed directly by WPI rather than by external biodiversity specialists. The aim will be to ensure that the requirements of 'Keep Satisfied' stakeholders are met, and that they are kept informed of Project progress.
- 4) **Monitor:** These stakeholders are perceived to have a lower level of interest in the biodiversity aspects of the Project, and a lower level of influence or power over Project

outcomes. The Project team will continue to monitor these stakeholders to see if their level of interest or influence increases and/or a greater level of engagement is required. These stakeholders will be kept informed of Project progress through Project newsletters, and in some cases, will be invited to workshops.

3 Principles and methods of engagement

The following key principles of effective engagement (IFC 2007) have been considered during the implementation of this engagement strategy:

- 1) Providing meaningful information in a format and language that is readily understandable and tailored to the needs of the target stakeholder group(s)
- 2) Providing information in advance of consultation activities and decision-making
- 3) Disseminating information in ways and locations that make it easy for stakeholders to access it
- 4) Respect for local traditions, languages, timeframes, and decision making processes
- 5) Two-way dialogue that gives both sides the opportunity to exchange views and information, to listen, and to have their issues heard and addressed
- 6) Inclusiveness in representation of views, including women, vulnerable and/or minority groups
- 7) Processes free of intimidation or coercion
- 8) Clear mechanisms for responding to people's concerns, suggestions, and grievances
- 9) Incorporating feedback into project or program design, and reporting back to stakeholders

Engagement and communication with stakeholders depends on the category/priority of each stakeholder and the phase of the project. The following methods will be used on this Project:

- Public consultation
- Invitation to review and comment on Project documents
- Information emails and letters
- Bilateral meetings (in-person or online)
- Workshops (in-person or online)
- Focus group
- Surveys and questionnaires
- Regular (e.g. annual or quarterly) consultation meetings with biodiversity stakeholders
- Project newsletters
- Company website
- Local and national media

4 Biodiversity-relevant stakeholders for the Project

Table 19 presents a summary of the biodiversity stakeholders relevant to this Project. Stakeholders have been categorised and prioritised (interest-power approach), and the methods of engagement are also provided.

Table 19. Summary of biodiversity relevant stakeholders and methods of engagement

| Group | Name | Category | Interest | Power | Priority | Engagement method |
|------------------------------------|---|----------|----------|-------|----------------|---|
| Government ministries and agencies | Ministry of Environment, Water and Forests (Ministerul Mediului, Apelor si Padurilor) | B | Low | High | Keep satisfied | Public consultation, letter, workshop, newsletter |
| | National Agency of Protected Natural Areas (Agenția Națională pentru Arii Naturale Protejate) https://ananp.gov.ro/ | B, C, D | High | High | Key player | Public consultation, letter, workshop, newsletter, review project docs, newsletter |
| Local public administration | Arad Environment Protection Agency | B, C | High | High | Key player | Public consultation, letter, bilateral meeting, workshop, regular meetings, newsletter, review project docs, newsletter |
| | Arad County Council – Environment and Urban Planning Directorates | B | High | High | Key player | Public consultation, letter, bilateral meeting, newsletter |
| | Mayor of Graniceri Commune | B | High | High | Key player | Public consultation, letter, regular meetings, newsletter |
| | Mayor of Pilu Commune | B | High | High | Key player | Public consultation, letter, regular meetings, newsletter |
| | Mayor of Socodor Commune | B | High | High | Keep informed | Public consultation, letter, regular meetings, newsletter |
| Local communities | People owning the land near the Project site | A | High | Low | Keep informed | Public consultation, newsletter, focus group, questionnaire |
| | Local shepherds | A | High | High | Key player | Public consultation, newsletter, focus group, questionnaire |
| | Local schools | D | Low | Low | Monitor | Newsletter, focus group, questionnaire |
| NGOs | Ardelene Carpatian Society | D | High | High | Key player | Public consultation, letter, bilateral meeting, workshop, |

| Group | Name | Category | Interest | Power | Priority | Engagement method |
|--|---|----------|----------|-------|----------------|---|
| | (SCA) (Societatea Carpatina Ardeleana) https://www.eke.ro/ro/fooldal-romana/ | | | | | regular meetings, newsletter, review project docs, newsletter |
| | Romanian Ornithological Society, BirdLife partner (Societatea Ornitologica Romana) https://www.sor.ro/ | C, D | High | Low | Keep informed | Public consultation, letter, bilateral meeting, workshop, regular meetings, review project docs, workshop, newsletter |
| | Eco Ruralis https://www.ecoruralis.ro/ | C, D | Low | Low | Monitor | Public consultation, letter, newsletter |
| | Milvus - Asociatia pentru Protectia Pasarilor, Targu Mures https://milvus.ro/en/ | C, D | High | High | Key player | Public consultation, letter, bilateral meeting, workshop, regular meetings, newsletter, review project docs, newsletter |
| | WWF Romania https://wwf.ro/ | C, D | High | Low | Keep informed | Public consultation, letter, bilateral meeting, workshop, newsletter |
| | Excelsior | C, D | Low | Low | Monitor | Letter, regular meetings |
| Universities, research institutes, and independent experts | Aurel Vlaicu University, Arad https://www.uav.ro/ | C, D | High | Low | Keep informed | Public consultation, letter, regular meetings, review project docs, bilateral meeting, newsletter |
| Private sector | Agricola Grăniceri – current user of the land | A | Low | Low | Monitor | Regular meetings |
| | Monsson (developer of 3 solar/wind projects near Dama project) | A | Low | Low | Monitor | Regular meetings |
| Lenders | IFC | B | Low | High | Keep satisfied | Regular meetings, bilateral meeting, review project docs, workshop, newsletter |
| | EBRD | B | Low | High | Keep satisfied | Regular meetings, bilateral meeting, review project docs, workshop, newsletter |

5 Stakeholder engagement to date

ESIA stakeholder engagement

Public consultation was conducted in line with regulatory requirements (ERM, 2023a). Notice boards were set up in the Project area and a public debate was organized in February 2021 at Arad County Council. As per legal requirements, public consultation meetings also took place in Grăniceri and Pilu communes. Some stakeholders raised concerns regarding the impact of the Project, which were formally answered within the regulatory consultation process facilitated by Arad Environmental Protection Agency.

Amongst the concerns raised by stakeholders during the public consultation, the following are relevant to biodiversity:

- The NGO Milvus raised concerns that a significant proportion of the Project area was being used as pastureland, which provided habitat for some bird species of conservation importance.
- A written opinion was submitted by the NGO Societatea Carpatina Ardeleana (SCA). SCA contested the location of the Project within the Natura 2000 sites, and stated that the ESIA did not properly assess the impact of the Project on the Pannonic salt steppes and salt marshes habitat, and on bird species included in the Annexes of the Birds Directive. SCA highlighted that there would be effective habitat loss because some bird species would be displaced from the site, as they would no longer use the area to forage once the solar panels were installed (e.g. Common Crane, White Stork, Black Stork, Eastern Imperial Eagle, Lesser Spotted Eagle, White-tailed Eagle, Saker Falcon).

In support of the ESIA scoping study and in alignment with the international requirements, key stakeholders were consulted during the scoping site visit in November 2022. The ESIA scoping engagement focussed on socio-economic and cultural aspects. The ESIA was subsequently approved by the Arad Environment Protection Agency in 2023.

BAP stakeholder engagement

To inform this BAP, engagement with biodiversity-relevant stakeholders started in October 2024 and continued until end of January 2025. Engagement was through virtual meetings and phone calls, one site visit and meeting, one BAP workshop, and emails. During the meetings with the SCA and Milvus Group, it was agreed that their concerns raised previously (see above) would be addressed in the BAP.

Table 20 summarises the engagement during the BAP development, with additional detail provided in the following section on the site visit and meeting in November 2024 and the BAP workshop in December 2024.

Table 20. Engagement conducted with stakeholders relevant to the Dama BAP

| Stakeholder organisation | Classification | Stakeholder contacts | Date & method of engagement | Topics discussed and follow up actions |
|--------------------------------|----------------|--|--|---|
| Societatea Carpatina Ardeleana | NGO | Janos Mark-Nagy | 10/10/2024: phone call | Discussed the possibility of collaboration between the SCA & Rezolv Energy in order to address SCA's & Milvus's concerns regarding the Project's impacts on biodiversity. |
| | | Janos Mark-Nagy | 31/10/2024: Teams meeting | It was agreed that SCA's concerns would be addressed in the BAP, which would be prepared by TBC. |
| | | Janos Mark-Nagy | 19/11/2024: Teams meeting | Presentation of Dama BAP scope and timeframe by TBC |
| | | Janos Mark-Nagy | 12/12/2024: BAP workshop (in-person) | See the workshop summary below |
| | | | | |
| Milvus Group | NGO | Attila Nagy Tamas Papp | 31/10/2024: Teams meeting | It was agreed that Milvus' concerns would be addressed in the BAP, which would be prepared by TBC. |
| | | Attila Nagy | 14/11/2024: Project site visit & meeting | See meeting minutes below |
| | | Attila Nagy, Tamas Papp, Krisztina Havadtoi | 19/11/2024: Teams meeting | Presentation of Dama BAP scope and timeframe by TBC |
| | | Attila Nagy, Tamas Papp, Krisztina Havadtoi | 12/12/2024: BAP workshop (in-person) | See the workshop summary below |
| | | Attila Nagy, Tamas Papp, Krisztina Havadtoi, Zsolt Hegyeli | 04/01/2025 | Responses to TBC questions (email 16/12/2024) regarding residual impacts on priority bird species, artificial nests, nest platforms, retrofitting powerlines, steppe polecat, grassland mowing vs. seeding, and recommended offset areas for birds. |
| | | Attila Nagy, Tamas Papp, Krisztina Havadtoi | January 2025: review of draft BAP | Provided comments which were incorporated into the Final BAP |
| WWF Romania | NGO | General email | 22/11/2024: email | Introductory email about the Project, BAP scope, and invitation to the BAP workshop. |
| | | Diana Cosmoiu, Carmen Padurean | 28/11/2024: Zoom meeting | Introductory call to discuss the Project, BAP scope, WWF programme on renewables, and the possibility of collaboration on this BAP. It was agreed that WWF would identify a representative |

| Stakeholder organisation | Classification | Stakeholder contacts | Date & method of engagement | Topics discussed and follow up actions |
|---|-------------------|----------------------------|-----------------------------|---|
| | | | | to attend the BAP workshop. They also offered to review and provide comments on the draft BAP. |
| Romanian Ornithological Society | NGO | General email | 22/11/2024: email | Introductory email about the Project, BAP scope, and invitation to the BAP workshop. No response. |
| | | Dan Hulea, Ciprian Fantana | 26/11/2024: email | Introductory email about the Project, BAP scope, and invitation to the BAP workshop. No response. |
| Excelsior | NGO | Mihai Pascu | 21/11/2024: email | Introductory email about the Project, BAP scope, and request for biodiversity information. This NGO declined being involved in this Project or providing biodiversity information. |
| Fauna and Flora International - Romania | NGO | Paul Hac | 29/11/2024: email | Introductory email about the Project, BAP scope, and invitation to the BAP workshop. No response. |
| Koros-Maros National Park in Hungary | Protected Area | Peter Banfi | 20/11/2024: email | Introductory email about the Project, BAP scope, and request for biodiversity information, including grassland and wetland restoration and bird conservation in the Koros-Maros National Park. No response. |
| National Agency of Protected Natural Areas (Agenția Națională pentru Arii Naturale Protejate) | Government Agency | N/A | 2022-2023 | Consulted during ESIA, SEA and AA, and provided project approval. |
| Arad Environment Protection Agency | Government Agency | N/A | 2022-2023 | Consulted during ESIA, SEA and AA, and provided project approval |

Project site visit and meeting with Milvus Group (14/11/2024)

Representatives of Rezolv Energy, Milvus Group and TBC undertook a visit on the Dama project site, and had extensive discussions on biodiversity, environmental, social and project design aspects. The following people attended this site visit:

- Jennifer Boca (JB): Rezolv Energy
- Vlad Alexandru Neagoe (VAN): Rezolv Energy
- Jan Zrno (JZ): Rezolv Energy
- Attila Nagy (AN): Milvus Group
- Mihai Coroi (MC): TBC

Project design updates

VAN and JZ provided updated information on the project design e.g. removal of six substations (1.36 ha plots) and keeping just one substation, distances of 3 m between panel rows, 4.5 m wide panel rows, the majority of the transmission line will be underground and only a few

hundred meters will be overground etc. They also mentioned the following project mapping data relevant to the BAP: drone images, topography survey map, hydrology survey map. MC requested this information in a subsequent email to VAN and JZ.

Milvus Group and SCA previously expressed concerns that the project would need to create new drains in order to remove surface water from the operational site. Rezolv Energy representatives confirmed that the project will not affect existing water drainage, and the project can operate when the site is seasonally flooded.

Key biodiversity stakeholders

We had discussions regarding the following key stakeholders that should be consulted while developing the BAP:

- AN mentioned that Excelsior NGO (<https://ongexcelsior.ro/ro/>) should be consulted as they were the custodians of the Natura 2000 site overlapping with the project area. Excelsior had this role until 2018 when the Government stopped NGOs from doing this type of work.
- AN mentioned that the National Agency of Protected Areas (ANAP) has a local office in Arad. They have very few employees (probably 3) and no capacity to manage the protected areas on the ground.
- EPA Arad and ANAP Arad need to approve any works in the protected area (e.g. changes in the layout of the ditches).
- ANAP and EPA will merge in 2025. It was agreed to consult with the Arad ANAP/EPA after developing the actions in the BAP.
- WWF Romania do not have projects in this part of Romania. However, they could have relevant information to share.
- AN mentioned that Koros-Maros National Park in Hungary should be consulted as they have very good experience on the restoration of similar grassland and wetland habitats. This park is about 15 km from the Dama project.
- Graniceri and Pilu commune councils and mayors should have information on the number of livestock and land ownership.

Site observations:

- The project site is very flat and is crossed by a network of ditches, the majority of which support water and wetland vegetation.
- Several plots within the project site have been ploughed without cultivation early this year or in the previous years.
- The remaining plots are being used for sheep grazing.
- *Marsilea quadrifolia* was observed in abundance on the edge of a ditch on the perimeter of the project site.
- An ornithologist from Wildlife Management Consulting (WMC) was conducting a bird survey as part of the one year monitoring between April 2024 and March 2025. The methodology involves visiting the site once per month and surveying vantage points and transects over two days.
-

Bird and habitat mitigation and conservation measures

The project intends to set aside a portion of the site for enhancing the biodiversity. The set aside area and location are still to be decided, and feedback obtained during the BAP workshop in December 2024 will be very useful in this respect. During the site visit, AN showed a plot of c. 80 ha, which has been ploughed and cultivated in some years since 2011, and which has very good potential for restoration because it is most likely to be seasonally flooded.

AN mentioned that bird electrocution on electricity pylons was an important problem in the wider area of the project. Corvids and Saker falcon are affected in particular and there is monitoring data that shows this. Milvus Group has been involved in a project with ENEL to install insulators on around 1000 pylons (20 kV lines), with a cost of around EUR 1 million. The cost could be around EUR300 per pylon. Milvus Group have not worked on assessing bird collisions or installing flight diverters, and they are not aware of such programmes in the project area. AN believes that installing insulators on the existing line within the project would be a good idea.

AN commented that the open areas created by removing six substations (1.36 ha each) from the project site are probably too small for large species of birds (e.g. geese) to use, but they could still be used by smaller birds for foraging and nesting on the ground. MC highlighted that these areas would be included in the grassland restoration actions and gains to be calculated in the BAP.

Milvus Group were recently involved in a project involving the installation and monitoring of around 100 nest boxes for birds near the project area. Birds have started using and nesting in the boxes very rapidly, and these include threatened species. AN commented that installation of bird boxes and platforms on pylons are very useful.

Improving the habitat for the small mammals that are the prey for priority raptor species is another measure that was discussed on site. AN commented that the souslik prefers the dry, grazed areas and mosaics of grassland with sparse vegetation and bare ground.

The project intends to keep a green buffer (c. 8 m wide) along the entire site perimeter. Planting trees in this buffer would be very useful for birds and other species as trees are lacking in the wider area of the project. However, the trees would create shade and reduce the solar radiation reaching the PV panels. Planting a mix of native low trees, shrubs and grassland will be considered for the project site perimeter. The project could also support planting trees outside the project area given that trees are very scarce or absent in the wider area.

To understand the existing grazing pressure in the project area, MC requested the approximate number of sheep per hectare or total numbers in the Graniceri and Pilu communes. Reducing the grazing pressure is an important measure to enhance the biodiversity, and which is being considered in the Dama BAP. AN suggested that the sheep grazing on the Dama project site could be compensation provided to shepherds for reducing the grazing levels outside the project area, in areas that we can consider as biodiversity compensation for the Dama project.

The ornithologist from WMC has not seen any hunting in the project area, but AN believes that hunters are active and hunting represents a threat to birds and other wildlife in the wider project area. Engaging with the hunters' association and involving them in awareness activities may be useful.

There have been cases of birds and other wildlife being poisoned indirectly on farmland c. 30 km from project site. This threat can be also addressed in awareness raising and educational programmes which could be supported by the project.

Of the measures listed above, AN believes that the area set aside for biodiversity within the Dama project site would be the most important.

Dama BAP Workshop (12/12/2024)

The BAP workshop took place on Thursday 12th December 2024 at the NH Hotel in Timisoara City. The workshop was attended by the persons listed in Table 21 below. The following additional stakeholders were also invited but they did not respond or declined: Romanian Ornithological Society, WWF Romania, FFI Romania.

Table 21. BAP workshop attendee list

| Name | Organisation | Email address |
|--------------------|--|--|
| Jennifer Boca | Rezolv Energy | jboca@rezolv.energy |
| Ivelina Atanassova | Rezolv Energy | iatanassova@rezolv.energy |
| Vlad Neagoe | Rezolv Energy | vneagoe@rezolv.energy |
| Silvia Timu | Rezolv Energy | stimu@rezolv.energy |
| Attila Nagy | Milvus Group | attila.nagy@milvus.ro |
| Tamas Papp | Milvus Group | tamas.papp@milvus.ro |
| Krisztina Havadtoi | Milvus Group | havadtoikrisztina@gmail.com |
| Janos Mark-Nagy | Ardelene Carpathian Society (Societatea Carpatina Ardeleana) | mark.nagy.janos@gmail.com |
| Petrisor Galan | Biodiversity Research & Consulting SRL, Wildlife Management Consulting | petrisorgalan@gmail.com |
| Filipe Canário | The Biodiversity Consultancy | filipe.canario@thebiodiversityconsultancy.com |
| Mihai Coroi | The Biodiversity Consultancy | mihai.coroi@thebiodiversityconsultancy.com |

The workshop agenda is presented in Table 22 below, and meeting notes are included in Table 23. Additional feedback from stakeholders during the workshop and responses to post-workshop questions have been incorporated into the Offset Pre-feasibility Study (Appendix 2).

Table 22. BAP workshop agenda (12th December 2024)

| Time | Agenda point/Topic | Presenter/Facilitator |
|---------------|--|------------------------------|
| 10:15 - 10:30 | Arrival of participants | All |
| 10:30 - 10:45 | Welcome and introduction of participants | Rezolv Energy |
| 10:45 - 10:55 | Agenda and objectives of the workshop | The Biodiversity Consultancy |
| 10:55 - 11:10 | Overview of Dama Solar Project and its Environmental & Social Studies | Rezolv Energy |
| 11:10 - 11:20 | Scope and objectives of the Biodiversity Action Plan (BAP) | The Biodiversity Consultancy |
| 11:20 - 11:35 | Introduction to lender biodiversity standards, mitigation hierarchy and offset principles | The Biodiversity Consultancy |
| 11:35 - 11:50 | Coffee break | All |
| 11:50 - 12:10 | Project biodiversity priorities and predicted impacts Q&A | The Biodiversity Consultancy |
| 12:10 - 12:20 | Mitigation strategy Q&A | The Biodiversity Consultancy |
| 12:20 - 12:35 | Estimated residual impacts and no net loss/net gain targets Q&A | The Biodiversity Consultancy |
| 12:35 - 13:10 | Lunch | All |
| 13:10 - 13:40 | Proposed on-site habitat restoration and biodiversity enhancement actions Q&A and Discussion | The Biodiversity Consultancy |
| 13:40 - 14:15 | Proposed off-site habitat restoration and biodiversity enhancement actions Q&A and Discussion | The Biodiversity Consultancy |
| 14:15 - 14:25 | BAP next steps | The Biodiversity Consultancy |
| 14:25 - 14:30 | Closing remarks | Rezolv Energy |
| 14:30 - 16:30 | Set aside for other Project discussions | N/A |

Table 23. BAP workshop notes

| Topic | Person | Comment | TBC Answer/Action |
|---|---------------------------------|--|---|
| Priorities | Tamas Papp | We should consider restoration potential not just current situation. Romania has an obligation to restore grassland habitat protected under EU Habitats Directive. | TBC has considered the restoration potential |
| Priorities | Attila Nagy | We should also include Steppe Polecat in the priorities. This species is related to souslik. It was recorded along the TL. Petrisor Galan: this species was recorded in the set aside area for grassland. | TBC: This species is not likely to be affected but we'll double check presence and habitat. |
| Electrocution impacts | Tamas Papp | This impact is not relevant here because the 2 pylons are high voltage line. | TBC: We'll recommend installing bird flight deflectors only. |
| Translocation of animals trapped in construction site | Petrisor Galan | This is not allowed by law. | Mihai: To find out whether this requires a licence. Are the restrictions for all animal species or only those protected? |
| Invasive species | Tamas Papp & Krisztina Havadtoi | Invasive spp are relevant because of large size of site, although salinity is a constraint for these species. Native weeds can still establish on site during/after construction. | TBC recommended Invasive Species Action Plan |
| Habitat condition | Ivelina Atanassova | In the table with the habitat loss/gain calculations, add column for resulting condition score, not just the increase in condition post-development. | TBC to add new column in table. |
| Habitat condition | Tamas Papp | What are the condition criteria? | Mihai: To be defined as part of the detailed monitoring protocols. This will consider EU Annex I habitat management manuals and control sites. |
| | Attila Nagy | What is the distance between panel rows? Vlad: 3m vertical projection but 7m at the top. | N/A |
| Raptor residual impacts | Petrisor Galan | Imperial eagle was only observed passing over the site. | N/A |
| Raptor residual impacts | Attila Nagy | The observer is not there all the time. Mr Nagy would like to see the thinking behind these estimates. | Filipe: estimates are based on existing data from Milvus, ongoing monitoring and professional judgment. We'll explain this in the draft BAP. |
| ACA01/OFF01 | Janos Mark-Nagy | ANIF Agency can lease the ditches to third parties. | Rezolv: to investigate this and see if Rezolv will be allowed to modify ditches, water level, and banks if they take the ditches in concession. |
| Mitigation | Attila Nagy | Will foxes go through the project security fence? They are a threat to birds. | Petrisor: current design is to leave gaps of 20cm. This will prevent foxes to enter the site including the set aside area. |

| Topic | Person | Comment | TBC Answer/Action |
|-------------------------|--------------------|---|--|
| ACA01/OFF01 | Krisztina Havadtoi | Will we consider cattle grazing in the set aside area? Ms Havadtoi recommends maximum 0.2 animals/ha, which could create a mosaic of habitat and favourable conditions for grassland. | Mihai: Cows do more damage than sheep but we'll consider this for the set aside area. This is not possible for the PV operational site. |
| ACA01/OFF01 | Attila Nagy | Rezolv will need agreement with the commune mayors regarding grazing level and licences. | Mihai/Silvia: 3-way agreement with commune mayor, Rezolv, shepherds. Rezolv will contact the two mayors to discuss this. Rezolv could support the preparation of a commune level grazing plan, or at least to bring the stakeholders to the same table. Silvia: if we only manage the grazing within the project site, this could generate conflicts as some shepherds may not be happy that they are not allowed inside the project area. |
| Grazing in project area | Krisztina Havadtoi | Do we need to change the land category from arable to grazing? We need clear contracts with the shepherds and communication between project and the shepherds. Petrisor Galan: The law says that an area over 50ha needs a formal change of land category. Project area has changed from agriculture to industrial use through the environmental permit. | N/A |
| Grazing in project area | Krisztina Havadtoi | Rezolv should work with shepherds to avoid harmful medicines (anti-parasites) used for sheep, which are very toxic and could contaminate the set aside area. | Include this aspect in the grazing plan and awareness raising. Plan should include alternative medicines which are not harmful, timing in which they can be used |
| Overall conclusions | Tamas Papp | There is a good direction on this project. Milvus has seen a lot of bad experience from other projects in Romania. | N/A |
| Overall conclusions | Janos Mark-Nagy | SCA expects to see more detail for each action. | TBC will provide more detail. |

6 Next steps

The list of stakeholders and their interests might change over time, and therefore the stakeholder identification and prioritisation should be reviewed and updated at key stages of the Project implementation. It is intended that these updates would be provided in future revisions of this BAP and/or in the overall Stakeholder Engagement Plan (SEP) for this Project. In line with GIIP (IFC 2007), the SEP will also define:

- 1) Provide a strategy and timetable for sharing information and consulting with stakeholders during the implementation of the Project
- 2) Describe resources and responsibilities for implementing stakeholder engagement activities
- 3) Describe how stakeholder engagement activities will be incorporated into the company's management system

Appendix 2: Offset pre-feasibility assessment

This appendix summarises the pre-feasibility assessment for the proposed offsets and additional conservation actions, considering the area of implementation, target biodiversity, expected gains, technical, social, political, governance and financial feasibility and implementation partners.

Table 24: Additional conservation actions for habitats

| ACA option | Area (location & size) | Target biodiversity | Expected gains | Technical feasibility | Social feasibility | Political feasibility | Governance feasibility | Financial feasibility | Average feasibility score | Implementation partners |
|------------|---|--|--|--|---|--|--|--|---------------------------|---|
| ACA01 | 82.09 ha set aside area within Project site | Pannonic salt steppe and salt marsh habitat Additional benefits for: priority bird species (raptors) and their prey populations (European Souslik), ground nesting birds, and reducing overgrazing threats within the Natura 2000 sites | 64.76 ha of arable land converted to natural grassland, and enhancement of the existing 17.33 ha of Pannonic salt steppes and salt marshes habitat Overall gain of 29.37 QH | The grassland establishment and management measures required for this action are well established, and experienced local providers and consultants are available. Score: 4 | This action is not likely to affect local people. Controlled grazing will be allowed in this area and this will benefit local people. Another benefit will be bird watching. Score: 4 | Low political risk given that the Project already has an environmental permit, and this action involves enhancement of biodiversity in a degraded area of Natura 2000 site. Score: 5 | Very easy to manage by Rezolv Energy who are owners of this land. Score: 5 | Implementation costs will be moderate during establishment (first 2 years) and low in long-term. Score: 3³⁸ | 4.2 | Rezolv Energy Biodiversity consultants NGOs Arad office of National Agency for Protected Areas |
| ACA02 | Area under panels: 463.09 ha | Pannonic salt steppes and salt marshes habitat, or another type of | 941.92 ha of arable land converted to | The grassland establishment and management | This action is not likely to affect local people. | Low political risk given that the Project already has an | Very easy to manage by Rezolv Energy | Implementation costs will be moderate during | 4.2 | Rezolv Energy Biodiversity consultants NGOs |

³⁸ This score does not consider the financial loss of Rezolv Energy from not producing power during the Project lifetime.

| ACA option | Area (location & size) | Target biodiversity | Expected gains | Technical feasibility | Social feasibility | Political feasibility | Governance feasibility | Financial feasibility | Average feasibility score | Implementation partners |
|------------|--|---|--|---|--|---|---|--|---------------------------|--|
| | Solar farm area excluding drains, roads, permanent infrastructure substation, PV case transformers and the Set Aside Area: 478.83 ha | species-rich grassland Additional benefits for: prey populations (European Souslik), and reducing overgrazing threats within the Natura 2000 sites | natural grassland Overall gain of 236.27 QH | measures required for this action are well established, and experienced local providers and consultants are available. Score: 4 | Controlled grazing will be allowed in this area and this will benefit local people. Score: 4 | environmental permit, and this action involves conversion of arable land to natural grassland. Score: 5 | who are owners of this land. Score: 5 | establishment (first 2 years) and low in long-term. Score: 3 | | Arad office of National Agency for Protected Areas |

Table 25: Offsets and additional conservation actions for priority species

| Offset or ACA option | Area (location & size) | Target biodiversity | Expected gains | Technical feasibility | Social feasibility | Political feasibility | Governance feasibility | Financial feasibility ³⁹ | Average feasibility score | Implementation partners |
|----------------------|---|---------------------|-------------------|---|--|--|--|---|---------------------------|---|
| OFF01 | Transmission line to be determined (less than 10 km from the Project) | Saker Falcon | ≥2 breeding pairs | The solution has been tested successfully in the region. There is local capacity to implement the action. Low uncertainty regarding | This action will not affect local people and it is likely to be generally regarded as a positive outcome. Score: 5 | Low political risk, as the solution has already been implemented in the region. Score: 5 | Requires a partnership / agreement with the company owning the transmission line and a permit from the authorities. But since there is previous regional experience with | Implementation costs are low: 6,500 EUR for acquiring and installing the nest boxes and annual costs of 5,000 EUR for maintenance | 4.4 | Rezolv Energy Biodiversity consultants NGOs Arad office of National Agency for Protected Areas Transelectrica |

³⁹ Costs presented here are estimates that need to be confirmed

| Offset or ACA option | Area (location & size) | Target biodiversity | Expected gains | Technical feasibility | Social feasibility | Political feasibility | Governance feasibility | Financial feasibility ³⁹ | Average feasibility score | Implementation partners |
|----------------------|--|--|---|---|---|---|--|---|---------------------------|---|
| | | | | expected gains. Score: 5 | | | this action with positive results, permits and agreements should be straightforward. Score 3 | and monitoring. Score: 4 | | |
| OFF02 | Red-footed Falcon colonies of Sinmartin and Adea (exact location to be determined) | Red-footed Falcon | ≥2 breeding pairs | The solution has been tested successfully in the region. There is local capacity to implement the action. Low uncertainty regarding expected gains. Score: 5 | This action will not affect local people and it is likely to be generally regarded as a positive outcome. Score: 5 | Low political risk, as the solution has already been implemented in the region. Score: 5 | Requires permission from the landowners and a permit from the authorities. But since there is previous regional experience with this action with positive results, permits and agreements should be straightforward. Score 4 | Implementation costs are low: 10,000 EUR for acquiring and installing the nest boxes and annual costs of 6,000 EUR for maintenance and monitoring. Score: 4 | 4.6 | Rezolv Energy Biodiversity consultants NGOs Arad office of National Agency for Protected Areas Landowners |
| OFF03 | Set aside area and additional plots in location to be determined within 10 km from the Project | Eastern Imperial Eagle, Long-legged Buzzard, Short-toed Snake Eagle (other tree nesting species, tree roosting bats) | 1 breeding pair of Eastern Imperial Eagle, 1 breeding pair of Short-toed Snake Eagle, 1 breeding pair of Long-legged Buzzard. | There is some implementation risk, as the success of the tree planting, especially of the bigger trees is not guaranteed. It will take at least 10-15 years for the trees to reach a height that is | This action will not have a great effect on local people (only a small area which will cease to be available for farming or grazing) and it is likely to be generally regarded as a | Low political risk given that this action involves enhancement of biodiversity in a degraded area of Natura 2000 site. Score: 5 | Requires permission from landowners, including a long-term agreement Score 3 | Implementation costs are low: 90,000 EUR Score 3 | 3.6 | Rezolv Energy Biodiversity consultants NGOs Arad office of National Agency for Protected Areas Landowners |

| Offset or ACA option | Area (location & size) | Target biodiversity | Expected gains | Technical feasibility | Social feasibility | Political feasibility | Governance feasibility | Financial feasibility ³⁹ | Average feasibility score | Implementation partners |
|----------------------|---|---------------------|--------------------|---|--|--|---|--|---------------------------|---|
| | | | | suitable for nest building. It is not guaranteed that the trees will be used by the target species, as other factors may be involved in nest site selection. Score: 3 | positive outcome. Score: 4 | | | | | |
| ACA03 | Project set aside area, Project area, OFF 02 and OFF 03 locations | Roller (Little Owl) | 10 pairs of Roller | The solution has been tested successfully in the region. There is local capacity to implement the action. Low uncertainty regarding expected gains. Score: 5 | This action will not affect local people and it is likely to be generally regarded as a positive outcome. Score: 5 | Low political risk, as the solution has already been implemented in the region. Score: 5 | Very easy to manage by Rezolv Energy within the set aside area. Requires permission from landowners for other areas. Requires a permit from the authorities. But since there is previous regional experience with this action with positive results, permits and agreements should be straightforward. Score: 4 | Implementation costs are low: 5.500 EUR for acquiring and installing the nest boxes and annual costs of 4.000 EUR for maintenance and monitoring. Score: 4 | 4.6 | Rezolv Energy Biodiversity consultants NGOs Arad office of National Agency for Protected Areas Landowners |

| Offset or ACA option | Area (location & size) | Target biodiversity | Expected gains | Technical feasibility | Social feasibility | Political feasibility | Governance feasibility | Financial feasibility ³⁹ | Average feasibility score | Implementation partners |
|----------------------|--|--|---|--|--|--|--|--|---------------------------|---|
| ACA04 | Distribution line adjacent crossing the Project. See Figure 16 | Saker Falcon, Roller, White Stork, waterfowl, waders, cranes (Common Buzzard, Common Kestrel, Sparrowhawk, corvids, other species) | Not determined | The solution has been tested successfully in the region. There is local capacity to implement the action. BFDs have an average efficacy of preventing 50% of collisions Score: 4 | This action will not affect local people and it is likely to be generally regarded as a positive outcome. Score: 5 | Low political risk, as the solution has already been implemented in the region. Score: 5 | Requires a partnership / agreement with the company owning the distribution line. Score 3 | Implementation costs are low: 22.000 EUR for insulating the pylons and 8,000 EUR for installing BFDs. Score: 4 | 4.2 | Rezolv Energy Biodiversity consultants NGOs Arad office of National Agency for Protected Areas Transeletrica/owner of the distribution line |
| ACA05 | Set aside area | Noctule Bat, Pond Bat (other bat species) | Undetermined number of bats. Monitoring is needed to provide indication of gains. | The solution has been tested successfully in the region. Success for the Noctule bat is almost guaranteed, but there is less information regarding the Pond Bat. There is local capacity to implement the action. Score: 4 | This action will not affect local people and it is likely to be generally regarded as a positive outcome. Score: 5 | Low political risk Score: 5 | Very easy to manage by Rezolv Energy within the set aside area. Requires a permit from the authorities. Score: 4 | Implementation costs are low: 4.000 EUR, plus some maintenance. Score 5 | 4.6 | Rezolv Energy Biodiversity consultants NGOs Arad office of National Agency for Protected Areas |

| Offset or ACA option | Area (location & size) | Target biodiversity | Expected gains | Technical feasibility | Social feasibility | Political feasibility | Governance feasibility | Financial feasibility ³⁹ | Average feasibility score | Implementation partners |
|----------------------|---|--|------------------|--|--|---|---|--|---------------------------|--|
| ACA06 | Within 10 km of the Project, although a larger area may be considered, if justified | All priority values identified in this BAP | To be determined | Local universities and NGOs have the knowledge and relevant experience Score 4 | This action will likely limit the development of some economic activities, including agriculture and grazing in the areas that will be classified. Score 4 | There is low political risk, but some stakeholders may regard this action as a tool for imposing some restrictions to economic activities. Score 3 | Requires the involvement of several stakeholders. Score 3 | Costs are expected to be moderate, mostly related to conducting to identify the best locations and to organize workshops with the relevant stakeholders and the environmental authorities. Score 3 | 3.4 | Rezolv Energy Biodiversity consultants NGOs Academic institutions Other companies operating within the Natura 2000 sites Arad office of National Agency for Protected Areas |
| ACA07 | Within 10 km of the Project, although a larger area may be considered, if justified | All priority values identified in this BAP | To be determined | Local NGOs have the knowledge and relevant experience, but it is not guaranteed that the Project will be financed. Score 3 | This action may pose restrictions on some economic activities such as agricultures, grazing or sports fishing. Score 3 | There is some political risk, as it will involve a change in land use, and possibly imposing some restrictions on some economic activities. Score 4 | Requires the involvement of several stakeholders. Score 3 | Costs are expected to be moderate, mostly related to sponsoring the preparation of the LIFE project proposal and co-financing up to 75% of the Project. Score 3 | 3.2 | Rezolv Energy Biodiversity consultants NGOs Academic institutions Other companies operating within the Natura 2000 sites Arad office of National Agency for Protected Areas |

Table 26: Additional conservation actions for all biodiversity

| ACA option | Area (location & size) | Target biodiversity | Expected gains | Technical feasibility | Social feasibility | Political feasibility | Governance feasibility | Financial feasibility | Average feasibility score | Implementation partners |
|------------|---|--|--|--|---|---|--|--|---------------------------|---|
| ACA08 | Within 10 km of Project, although a larger area may be considered | Pannonic salt steppes and salt marshes habitat Annex 1 birds | Biodiversity gains expected through better knowledge on the distribution, ecology, threats of the target habitats/ species, which in turn will inform programs to reduce threats to biodiversity, and sustainable spatial planning to avoid significant impacts on biodiversity. | Local universities and NGOs have extensive experience and relevant programmes that need additional funding. Score: 4 | This action will not affect local people and it is likely to be generally regarded as a positive outcome. Score: 5 | Political support is likely given that this action involves improving the biodiversity knowledge in the wider area including Natura 2000 sites that do not currently have funding. Score: 5 | These programmes will be managed by local universities or NGOs, which have extensive experience. Score: 4 | Local universities and NGOs to submit proposals to continue existing research/ monitoring or start new programmes relevant to the priority habitat/ species relevant to this Project. Score: 3 | 4.2 | Rezolv Energy Local NGOs Local Universities |
| ACA09 | Within 10 km of Project | All priority biodiversity identified in this BAP | Biodiversity gains expected through reducing current threats and sustainable/bio diversity friendly agriculture. | Local NGOs have extensive experience and relevant programmes that need additional funding. Score: 5 | This action is likely to have the support of the local stakeholders. It will also facilitate the engagement between local stakeholders, biodiversity specialists, and Rezolv Energy. Score: 4 | Political support is likely given that this action involves reducing threats to biodiversity in the wider area including Natura 2000 sites. Score: 5 | These programmes will be managed by local NGOs, which have extensive experience in awareness raising programmes and engagement with local stakeholders. Score: 5 | The cost of delivering six awareness raising sessions to be proposed by NGOs. Score: 4 | 4.6 | Rezolv Energy Local NGOs |

Appendix 3: Biodiversity Monitoring and Evaluation Plan (BMEP) framework

This appendix contains BMEP framework for the Project.

Table 27: Monitoring framework for priority biodiversity features during Project construction

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|-------------------------|--|-------------------|---|---|---|---|--|----------------------------------|----------------------|
| | | | | Warning | Critical | | | Internal | External |
| All biodiversity | Biodiversity training and awareness-raising activities for workers | Response | Number of staff trained | >10% of staff have not received training with biodiversity component in the last 6 months | >15% of staff have not received training with biodiversity components in the last 6 months | Inspection of training records | During construction, monthly | EPC Contractor Rezolv Energy | Not required |
| Priority bird species | Priority bird species composition and relative abundance | State | Presence/absence and abundance of priority bird species | Absence of a species at >10% of sites where previously encountered or a decrease in abundance of 15% for a species. | Absence of a species at >30% of sites where previously encountered or a decrease in abundance of 25% for a species. | Bird surveys will involve walking transects, as well as observation from vantage points to survey birds of prey and waterbird counts. | Monitoring of the bird community in general and birds of prey on a quarterly basis | Project Environmental Management | Expert ornithologist |
| Priority bat species | Priority bat species composition and relative abundance | State | Presence/absence and abundance of priority bat species | Absence of a species at >10% of sites where previously encountered or a decrease in abundance of 15% for a species. | Absence of a species at >30% of sites where previously encountered or a decrease in abundance of 25% for a species. | Bat point counts with ultrasound recorders. | Monitoring of the bat community in spring, autumn and summer | Project Environmental Management | Bat expert |
| Priority mammal species | Priority mammal species composition and relative abundance | State | Presence/absence and abundance of priority mammal species | Absence of a species at >10% of sites where previously encountered or a decrease in | Absence of a species at >30% of sites where previously encountered or a decrease in | Camera trap surveys. Search and monitor European Souslik burrows | Monthly | Project Environmental Management | Mammal expert |

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|-------------------------------|---|-------------------|--|--|---|--|--|----------------------------------|----------------------|
| | | | | Warning | Critical | | | Internal | External |
| | | | | abundance of 15% for a species. | abundance of 25% for a species. | | | | |
| Priority herpetofauna species | Priority herpetofauna composition and relative abundance | State | Presence/abundance of priority reptile and amphibian species | Absence of a species at > 10% of sites where previously encountered or a decrease in abundance of 15% for a species. | Absence of a species at >30% of sites where previously encountered or a decrease in abundance of 25% for a species. | Transects and point counts (acoustic sample) | Quarterly | Project Environmental Management | Expert herpetologist |
| Natural habitat | Number of terrestrial Invasive Alien Species (IAS) within Project area | Pressure Response | Number of new IAS | >2 new IAS compared to previous quarterly monitoring | >4 new IAS compared to previous quarterly monitoring | Visual monitoring of construction sites | During construction, quarterly | EPC Contractor | Expert botanist |
| Terrestrial fauna | Wildlife collisions with vehicles in the Project area | Pressure Response | Number of wildlife collisions with vehicles | >2 collisions with any animal species ≥1 collision with a priority species | >4 collisions with any animal species ≥2 collisions with a priority species | Registration of anecdotal evidence in construction sites | During construction, daily register within construction sites; fortnightly monitoring of access roads. | EPC Contractor | Not required |
| Terrestrial fauna | Disturbance to terrestrial fauna, both directly and indirectly (noise, light etc) | Pressure | Number of non-compliances detected from the Construction Environmental Management Plan, and Biodiversity Management Plan | > 1 non-compliance detected | > 3 non-compliance detected | Verification of records | During construction, continuously | EPC Contractor | Not required |

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|-----------------------|--|-------------------|---|-----------------------------|-----------------------------|-------------------------|-----------------------------|----------------|--------------|
| | | | | Warning | Critical | | | Internal | External |
| Aquatic habitat | Degradation of water quality in canals/ditches within Project site | Pressure | Number of non-compliances detected from the Construction Environmental Management Plan, Emergency Response Plan and Waste Management Plan | > 1 non-compliance detected | > 3 non-compliance detected | Verification of records | During construction, weekly | EPC Contractor | Not required |

Table 28. Monitoring framework for priority biodiversity features during Project operation

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|--|--|-------------------|-------------------------------------|---|--|--|--|----------------------------------|-----------------|
| | | | | Warning | Critical | | | Internal | External |
| All biodiversity | Biodiversity training and awareness-raising activities for workers | Response | Number of staff trained | >10% of staff have not received training with biodiversity component in the last 6 months | >15% of staff have not received training with biodiversity components in the last 6 months | Inspection of training records | During operation, every 6 months | O&M Contractor | Not required |
| Natural habitat (grassland type to be confirmed) | Quality of grassland habitat restored in | Response State | Change in the habitat quality score | Increase by <0.2 in habitat quality compared to baseline | No increase in habitat quality compared to baseline | Measure vegetation structure and composition using plots/transects. Actual methods and indicators to be defined as part of the monitoring protocols. | Twice per year in years 1-3, once per year in years 4-6, then every 2 years until year 25. | Project Environmental Management | Expert botanist |

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|-------------------------|--|-------------------|---|--|--|---|--|----------------------------------|----------------------|
| | | | | Warning | Critical | | | Internal | External |
| | the operational Project site ⁴⁰ | | | | | | | | |
| Priority bird species | Priority bird species composition and relative abundance | State | Presence/absence and abundance of priority bird species | Absence of a species at > 10% of sites where previously encountered or a decrease in abundance of 15% for a species. | Absence of a species at > 30% of sites where previously encountered or a decrease in abundance of 25% for a species. | Bird surveys will involve walking transects, as well as observation from vantage points to survey birds of prey and waterbird counts. | Monitoring of the bird community in general and birds of prey on a quarterly basis during the first three years of operation | Project Environmental Management | Expert ornithologist |
| Priority bat species | Priority bat species composition and relative abundance | State | Presence/absence and abundance of priority bat species | Absence of a species at > 10% of sites where previously encountered or a decrease in abundance of 15% for a species. | Absence of a species at > 30% of sites where previously encountered or a decrease in abundance of 25% for a species. | Bat point counts with ultrasound recorders. | Monitoring of the bat community in spring, autumn and summer during the first three years of operation | Project Environmental Management | Bat expert |
| Priority mammal species | Priority mammal species composition and relative abundance | State | Presence/absence and abundance of priority mammal species | Absence of a species at > 10% of sites where previously encountered or a decrease in abundance of 15% for a species. | Absence of a species at > 30% of sites where previously encountered or a decrease in abundance of 25% for a species. | Camera trap surveys. Search and monitor European Souslik burrows | Monthly during the first three years of operation | Project Environmental Management | Mammal expert |

⁴⁰ This action represents both mitigation (a responsibility to restore the site at the end of construction) and an additional conservation action (ACA02) given the net gain aim.

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|-------------------------------|--|-------------------|--|---|---|--|--|----------------------------------|----------------------|
| | | | | Warning | Critical | | | Internal | External |
| Priority herpetofauna species | Priority herpetofauna composition and relative abundance | State | Presence/abundance of priority reptile and amphibian species | Absence of a species at >10% of sites where previously encountered or a decrease in abundance of 15% for a species. | Absence of a species at >30% of sites where previously encountered or a decrease in abundance of 25% for a species. | Transects and point counts (acoustic sample) | Quarterly during the first three years of operation | Project Environmental Management | Expert herpetologist |
| Natural habitat | Number of terrestrial IAS in the Project area | Pressure Response | Number of new IAS | >2 new IAS compared to previous annual monitoring | >4 new IAS compared to previous annual monitoring | Visual monitoring of occurrence sites | Once per year during the first five years of operation phase | O&M Contractor | Expert botanist |
| Priority fauna species | Wildlife collisions with vehicles in the Project area | Pressure Response | Number of wildlife collisions with vehicles | >2 collisions with any animal species ≥1 collision with a priority species | >4 collisions with any animal species ≥2 collisions with a priority species | Record anecdotal events in project areas. Driving along access roads. | Monthly during operation | O&M Contractor | Not required |
| Bird and bat species | Bird and bat mortality through collisions with the solar panels or the project fence | Pressure Response | Number of fatalities | >5 collisions/year with any bird species ≥1 collision with a priority species | >10 collisions/year with any bird species ≥2 collision with a priority species | Post-construction fatality monitoring following GIIP, specifically the most recent guidance (IFC <i>et al.</i> 2023) | Monthly during the first three years of operation | O&M Contractor | Ecology expert |
| Bird species | Bird mortality through electrocutions or collisions with the power line | Pressure Response | Number of fatalities | >5 collisions/year with any bird species ≥1 collision with a priority species | >10 collisions/year with any bird species ≥2 collision with a priority species | Post-construction fatality monitoring following GIIP, specifically the most recent guidance (IFC <i>et al.</i> 2023) | Monthly during the first three years of operation | O&M Contractor | Ecology expert |

Table 29. Monitoring framework for priority biodiversity features in offset areas and additional conservation actions

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|--|---|----------------------|--|---|---|--|--|--|----------------------------|
| | | | | Warning | Critical | | | Internal | External |
| All biodiversity | ACA09 Educational and awareness sessions for local stakeholders | Response Pressure | Number of awareness sessions delivered | <2 biodiversity awareness sessions delivered in the last year | No awareness session delivered in the last year | Inspection of training and stakeholder engagement records | First five years of Project operation, once per year | Project Environmental Management | NGOs |
| Natural habitat (Pannonic salt steppes and salt marshes) | ACA01 Extent of Pannonic salt steppes and salt marshes in the set aside area | State Pressure | Extent (ha) and percentage change in natural habitat cover | <5% increase of habitat cover | Loss of habitat cover | 1. Map extent according to satellite images 2. Analyse habitat extent 3. Compare to baseline and previous monitoring period, and calculate change in habitat cover extent (ha) | Once per year for first 5 years of operation, and every 3 years thereafter until decommissioning | Project Environmental Management O&M Contractor | Habitat mapping specialist |
| Natural habitat (Pannonic salt steppes and salt marshes) | ACA01 Quality of grassland habitat restored in the set aside area | Response State | Change in the habitat quality score | Increase by <0.2 in habitat quality compared to baseline | No increase in habitat quality compared to baseline | Measure vegetation structure and composition using plots/transects. Actual methods and indicators to be defined as part of the monitoring protocols. | Twice per year in years 1-3, once per year in years 4-6, then every 2 years until year 25. | Project Environmental Management | Expert botanist |
| Natural habitat (grassland type to be confirmed) | ACA02 Quality of grassland habitat restored in the operational Project site | Response State | Change in the habitat quality score | Increase by <0.2 in habitat quality compared to baseline | No increase in habitat quality compared to baseline | Measure vegetation structure and composition using plots/transects. Actual methods and indicators to be defined as part of the monitoring protocols. | Twice per year in years 1-3, once per year in years 4-6, then every 2 years until year 25. | Project Environmental Management | Expert botanist |

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|---|---|-------------------|--|---|---|---|---|--|----------------------|
| | | | | Warning | Critical | | | Internal | External |
| Natural habitat (native trees) | ACA01 & ACA02 Planted tree survival rate in Project area | Response | Survival rate of planted trees | 75-80% survival rate | <75% survival rate | Monitor survival of planted trees species through botanical surveys of restored sites | End of construction, once in year 1, and once in year 2 of operation phase, in mid-spring | Project Environmental Management O&M Contractor | Expert botanist |
| Saker Falcon | OFF 01 Number of breeding pairs | Response | Number nest boxes occupied, breeding success (number of chicks that fledged successfully) | <3 unoccupied nest boxes <30% breeding success | <2 unoccupied nest boxes <50% breeding success | Annual inspection of nest boxes during the breeding period | Annually throughout the lifetime of the Project | Project Environmental Management O&M Contractor | Expert ornithologist |
| Red-footed Falcon | OFF 02 Number of breeding pairs | Response | Number nest boxes occupied, breeding success (number of chicks that fledged successfully) | <3 unoccupied nest boxes <30% breeding success | <2 unoccupied nest boxes <50% breeding success | Annual inspection of nest boxes during the breeding period | Annually throughout the lifetime of the Project | Project Environmental Management O&M Contractor | Expert ornithologist |
| Eastern Imperial Eagle, Short-toed Snake Eagle, Long-legged Buzzard | OFF 03 Number of breeding pairs | Response | Number of nests installed (starting 15 years after planting the trees) Breeding success | NA < 2 fledglings /year | < 1 nests (each species) < 1 fledglings/year | Annual inspection of tree patch during the breeding period | Annually throughout the lifetime of the Project (starting 15 years after planting) | Project Environmental Management O&M Contractor | Expert ornithologist |

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|---|------------------------------------|-------------------|--|---|---|--|--|--|----------------------|
| | | | | Warning | Critical | | | Internal | External |
| Eastern Imperial Eagle, Short-toed Snake Eagle, Long-legged Buzzard | OFF 03 Planted tree survival | Response | Presence of suitable trees for nesting per tree patch | < 2 suitable trees per patch | < 1 suitable tree per patch | Inspection of the tree patches | Annually | Project Environmental Management O&M Contractor | Expert ornithologist |
| Roller | ACA 03 Number of breeding pairs | Response | Number nest boxes occupied, breeding success (number of chicks that fledged successfully per nest) | <30% unoccupied nest boxes <50% breeding success | <50% unoccupied nest boxes <30% breeding success | Annual inspection of nest boxes during the breeding period | Annually throughout the lifetime of the Project | Project Environmental Management O&M Contractor | Expert ornithologist |
| Birds | ACA 04 Number of fatalities | Response | Variation in the number of fatalities after implementation | =number of fatalities compared to pre-implementation (if different than zero) | > number of fatalities compared to pre-implementation | Post-construction Fatality Monitoring (IFC <i>et al.</i> 2023) | Monthly, starting at least a year before installation and for the first 3 years after installation | Project Environmental Management O&M Contractor | Expert ornithologist |

| Priority Biodiversity | Indicator | Type of indicator | Measure | Threshold | | Method | Duration and frequency | Responsible | |
|-----------------------|--------------------------|-------------------|--|--|---|--|---|--|------------|
| | | | | Warning | Critical | | | Internal | External |
| Priority bat species | ACA 05 Number of bats | Response | Number of bats of each priority species occupying the bat box(es) Bat activity (priority species) in the area surrounding the bat boxes (<1 km) | No occupation by one of the priority species <5% increase in activity in the area surrounding the bat boxes | No occupation by any of the priority species No increase in activity in the area surrounding the bat boxes | Inspection of the bat boxes Ultrasound recordings in the area surrounding the bat boxes | Bi-annual inspection of the bat boxes (reproduction and hibernation) Ultrasound monitoring of the bat community in spring, autumn and summer during the first three years of operation and one year before installation of the bat box | Project Environmental Management O&M Contractor | Bat expert |