

EBRD COVID-19 Resilience Framework - Environmental Social Assessment Training Programme



Video 1 – Power generation



June 2020

Introduction

Introduction

The purpose of this training video is to illustrate how EBRD's Environmental and Social Policy (2019) and the accompanying Performance Requirements can be applied during an environmental and social assessment of a Project within the power generation sector.

The example used is the construction and operation of a new wind farm.

Introduction to the Project

Key facts:

- 30 onshore wind turbine generators providing up to 110MW
- 25km overhead transmission line
- Construction camp, control room, substation
- Existing earth tracks upgraded into paved roads available for public use
- Turbines positioned on mountain peaks and are highly visible



Application of the PRs

EBRD Performance Requirement		Applicability and justification
1	Assessment and Management of Environmental and Social Risks and Impacts	Yes – category A Project. A detailed environmental and social assessment was completed due to the scale and magnitude of the project, and potential for significance changes in the landscape and visual setting to occur.
2	Labour and Working Conditions	Yes – due to the presence of a workforce and multiple primary suppliers to provide goods and services, and from the use of a construction camp for the workforce. Contractor management is required.
3	Resource Efficiency and Pollution Prevention and Control	Yes – due to the Project's use of resources (water, materials, fuels, aggregate) during construction, potential impact to mountain springs, and the generation of noise and shadow flicker during operation of the turbines.
4	Health, Safety and Security	Yes – from the use of road vehicles, hazards to workforce and local communities during construction (including multiple heavy lifts), and the potential for ice throw to occur during winter operations.
5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Yes – as land is required for the turbine foundations which was leased from private individuals. The land for the access roads is owned by the state. Land surrounding the turbines is informally used by animal herders and local people for grazing and the collection of forestry products, animal feedstock, herbs, etc.
6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes – site located within an Internationally recognised area of importance for biodiversity (Important Bird Area) where three International Union for Conservation of Nature Red List species are present.
7	Indigenous Peoples	No – there are no people in the project area that meet the PR7 applicability criteria.
8	Cultural Heritage	Yes – significant excavations and earth movements.
10	Information Disclosure and Stakeholder Engagement	Yes – a comprehensive public disclosure and consultation process was undertaken. There is significant interest in the Project due to visual impacts and expectation of local employment and community development projects.

Introduction to the Project

Using the Project we will explore the application of:

- PR5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- PR6: Biodiversity Conservation and Sustainable Management of Living Natural Resources



The project area is used informally for the grazing of livestock and the collection of natural resources.



Mountain springs are present and water is consumed by local herders and livestock. Variety of bats and birds are also present (caves).

Task 1 – Review of existing documentation

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The following was requested from the Client:

PR5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

- Environmental and social impact assessment report
- Land acquisition and resettlement planning documentation
- Stakeholder engagement plan and recent engagement records
- Grievance mechanism and the latest version of the register

PR6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

- Environmental / biodiversity baseline survey reports
- Critical Habitat Assessment
- Collision risk model
- Bird and bat monitoring reports
- Biodiversity action plan

Task 2 - Site visit and discussions

The site visit included a meeting with directly affected land users,

Let's discuss the location of transmission pylons and land boundaries.



Livestock herders were not aware of how the project could affect them, or their entitlement to livelihood restoration measures.

No communication protocols were established between the Client and informal land users, to inform them of access restrictions during construction.

The Project's construction schedule and installation of temporary fences should have included regular crossing points, the locations agreed in consultation with herders.



At least three community liaison officers were needed on the Client's Project Team.

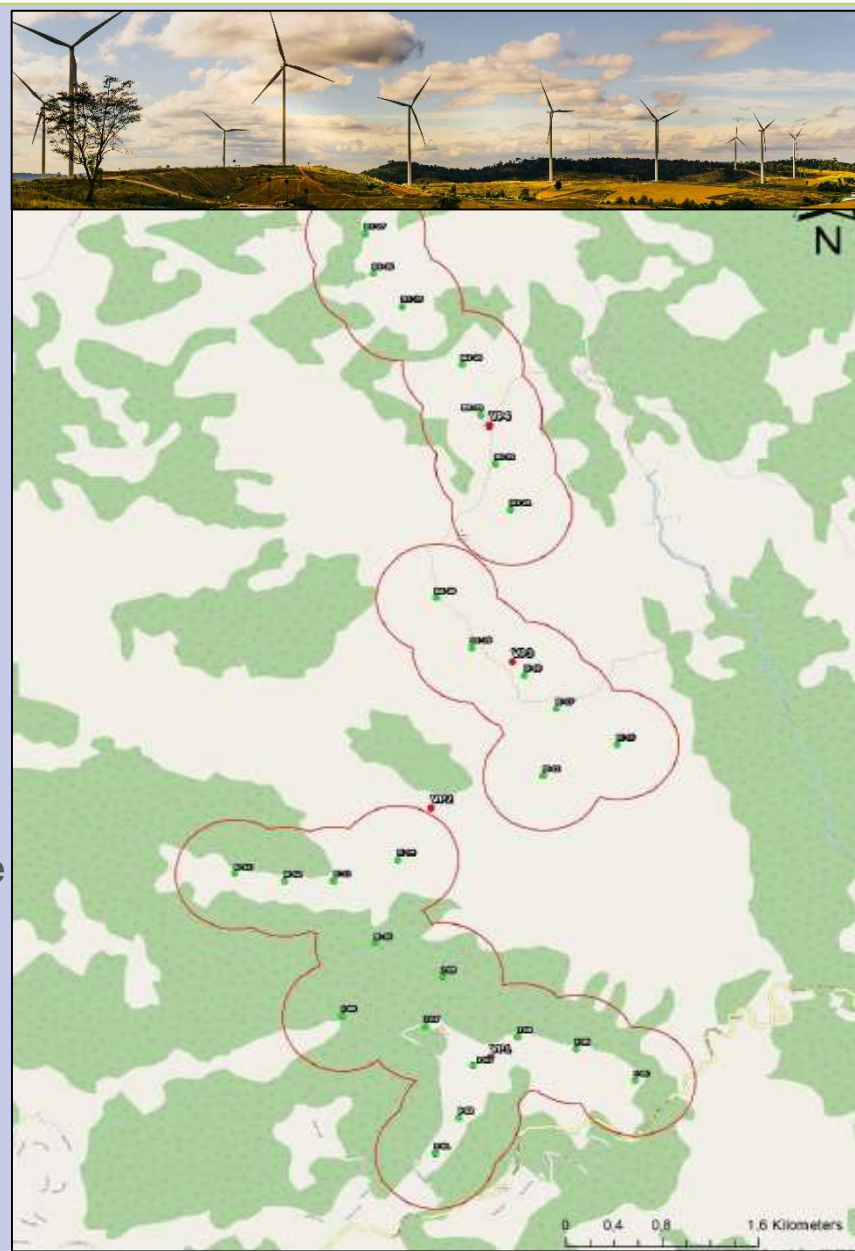
Good international practice for avoiding impacts on biodiversity



- Avoid sensitive locations to limit impacts on birds and bats.
- Windfarms should not be located in:
 - Habitats for sensitive species, or areas between good quality habitat
 - Special Protection Areas, Important Bird and Biodiversity Areas, or where they may interact with designated species
 - Locations identified as important by BirdLife International
 - Major migration routes or where large numbers of birds or bats are highly concentrated (mountain passes)
 - Areas of high collision risk to birds (wetlands, mountain ridges, woodlands which are critical locations for bats)
 - Known flight paths.
- Prepare a collision risk model based on good baseline (see next slide)
- Avoid sensitive construction periods (migratory seasons, nesting of rare bird species within an appropriate distance)
- Avoid night working to avoid disturbance to nocturnal bats

Collision risk model

- Collision risk model produced for resident and migratory bird species and bats.
- In line with GIP, survey timing for birds reflected migratory and/or breeding period, (target species present / more numerous and most exposed).
- Data was collected during 50 hour periods, from four observation points, every 2 weeks for 12 months.
- Collision risk assessed for birds and bats, taking into account size and flying speed of each species, and average operational turbine speed.
- Validity of each model input factor was checked.
- Model provided a good basis for the development of mitigation measures.



Wind farm mitigation measures (1)

Key potential impacts:

- Collisions with turbines and mortality (some species are more sensitive than others)
- Disturbance of mammals and birds for some distance around wind farms
- Disruption of nocturnal species by lighting and human presence in remote areas
- Loss of habitat (direct footprint and disturbance)

Mitigation:

- Micro-siting of turbines to avoid sensitive locations
- Use human surveillance and/or artificial technology to detect sensitive bird species and shut down turbines to reduce risk of collisions (active turbine management)
- Use bat deterrent technologies: acoustic deterrents, textured coatings, low-level ultraviolet lighting
- Stopping energy production at pre-defined wind speeds to reduce bat fatalities (curtailment)
- Different operational strategies (e.g., feathering vs. free-wheeling)
- Integrated "detection-deterrent" and "detection-avoidance" systems

Wind farm mitigation measures (2)



- Employ ecologists to supervise construction, conduct pre-construction checks and ensure no wildlife entrapment occurs
- Control food waste that could attract birds
- Control illegal hunting and stop the collection of Hermann's tortoise for pet trade.
- Restore disturbed areas by developing a detailed restoration plan with target vegetation types and specifying methods to ensure correct species composition.
- Conduct ongoing bird and bat monitoring and use results to adjust operational management controls, such as cut-off speeds for turbines.
- Monitor overhead power lines for collisions
- Carcass counting as part of a wider monitoring strategy

Upgrading access roads



Key potential impacts:

- Physical disturbance and dust effects on nationally protected plant species that might trigger Critical Habitat
- Loss of habitat for Hermann's tortoise, barrier effects, mortality from construction and operation traffic, disturbance affecting breeding success.

Mitigation:

- Avoiding rare plant communities for reptiles that cannot relocate.
- Develop a Salvage and Translocation Plan (pre-construction surveys, timing, translocation methods, identification of new locations)
- Minimise footprint and use barriers to surround working areas (done when plant species are flowering and visible)
- Prevent tortoises from entering working areas and rescue them if trapped, with ongoing monitoring by a specialist ecologist.
- Consider road crossing structures in the future if required

Overhead transmission line

Impacts:

- Collision risk for certain bird species
- Footprint from installation of pylons on concrete pads
- Disturbance to additional land during construction
- Permanent land clearance may be needed beneath OHL
- Construction noise may disturb nesting birds (*Circaetus gallicus*)
- Less mobile species may be impacted (Hermann's tortoise)

Project assessed for GIP – mitigation measures include:

- Align transmission line with bird flyway routes to minimise collision risk.
- Time construction works to avoid disturbance to sensitive birds or maternity roosts of rare bats until young leave the nest/roost.

GIP could also include:

- Burying power lines (if possible) in sensitive locations such as migratory bottlenecks
- Installing bird flight diverters to enhance visibility (does not work for night flying species)
- Using horizontal arrays of lines
- Installing insulation to minimise electrocutions when birds perch on lines



Task 3 – Analysis and reporting using the EBRD format

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The following gaps were identified that needed to be addressed in the ESAP:

1. There was no assessment of how the Client has avoided or minimised, land-related impacts in accordance with the mitigation hierarchy.
2. The ESIA did not include an adequate description of land users, or the impact of restricting access to mountain springs. There was an over-reliance on the use of Google Earth to identify social receptors and understand land use patterns.
3. Additional stakeholder engagement was required to optimise the design and location of the transmission line pylons with project affected people, reflecting land boundaries.
4. A Livelihood Restoration Plan was required which should contain a criteria of who will be entitled to livelihood restoration measures.
5. The Client needed to recruit up to three CLOs. Their role will be to:
 1. Inform land users about the Project, locations of access restrictions during construction and agree on crossing points along road construction sections, provide information on local employment opportunities, grievance mechanism, and community development initiatives.
 2. Inform land users future land-related impacts during operation (shadow flicker, noise, ice throw) and that areas in-between turbines can still be used for grazing and other purposes.

Task 3 – Analysis and reporting using the EBRD format

The following gaps were identified that needed to be addressed in the ESAP:

1. Priority biodiversity features and critical habitats were not fully defined.
2. The baseline scope was not commensurate with the scale and magnitude of the Project or the sensitivity of the location from a biodiversity perspective.
3. There was too much reliance on pre-construction surveys (too late for impact avoidance). Therefore additional surveys were required for birds and bats, including bird species associated with an IBA.
4. Additional consultation was required to assess the impact on the IBA.
5. Potential impacts on mountain springs, secondary impacts on habitats and cumulative effects were not evaluated.
6. There was no reinstatement plan for areas during construction.
7. A critical habitat assessment should have been done, focusing on each trigger species.
8. A Biodiversity Action Plan should have been prepared to demonstrate mitigation of impacts on priority biodiversity features and achievement of net gain in critical habitats (if present).
9. The risk of spreading invasive species was not assessed in the ESIA.
10. Potential impacts on ecosystem services (mountain spring, grazing areas) not assessed in detail.

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