RUISI WIND POWER PLANT PROJECT

Environmental and Social Impact Assessment Package

Non-Technical Summary (NTS)

Project Implementer:
JSC Wind Power

Prepared by:
WEG Envi Consulting LLC

January 2024

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List of Abbreviations

ABBREVIATION	MEANING
Ahs	Affected Households
CESMP	Construction Environmental & Social Management Plan
CH	Cultural Heritage
CHA	Critical Habitat Assessment
EBRD	European Bank for Reconstruction and Development
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
ESIA	Environmental & Social Impact Assessment
ESMS	Environmental and Social Management Systems
IFC	International Finance Corporation
MEPA	Ministry of Environmental Protection and Agriculture of Georgia
NTS	Non-Technical Summary
OHTL	Overhead Transmission Lines
O&M	Operation & Maintenance
PAP	Project Affected Person
PIC	Public Information Centre
PR	Performance Requirement
PS	Performance Standard
SEP	Stakeholder Engagement Plan

1 Introduction

1.1 Project Background

This document is a Non-Technical Summary of the Environmental and Social Impact Assessment (ESIA) Report for the Project on Construction and Operation of 206 MW Ruisi Wind power plant (Ruisi WPP) on the territory of Kareli and Gori Municipalities in Shida Kartli (Inner Kartli) region of Georgia. Project implementation is planned by the JSC Wind Power.

JSC Wind Power is the company whose team has a significant experience in development of renewable energy sector in Georgia. JSC Wind Power is developing the Ruisi Wind Farm Project on selected territory on the basis of the Memorandum of Understanding from 10-th of August 2021 signed with the Government of Georgia. According to assessment of wind regimes on the selected territory location of the Ruisi Wind Farm is suitable for installation of 46 wind turbines with 206 MW total installed capacity

According to design the total power capacity of the Ruisi Wind Farm will be 206 MW; installed power capacity of each wind turbine will be 4.5 MW in average. There are 46 locations selected for installation of wind turbines. Environmental impact will be assessed for worst case scenario that implies installation of 46 wind turbines with installed capacity of 4.5 MW each. In reality the impact will be lower because actual specific models of wind turbines will be selected during tendering process on the basis of best offer. 4.5 MW just corresponds to the minimum capacity of turbines and 46 to the maximum number of turbines. Finally, the number of turbines is expected to be lower, which means that capacity of some turbine will increase in a way to get 206 MW installed capacity of the entire wind power plant. Reduction of their total number will result in reduction of impact intensity. Therefore, draft environmental impact assessment (construction areas; noise and shadow flickering simulation; impact on habitats and soil, etc.) is carried out for worst case scenario, impact of which on environment exceeds the impact that Project will actually have in reality. For the worst case scenario following assumptions have been made:

- the number of the turbines is – 46
- height of turbines – 150m
- rotor diameter – 163m
- until the particular model of turbine is determined it is referred as Generic WTG 4.5MW platform

This NTS is prepared as a part of the entire ESIA Package on the basis of the EBRD Environmental and Social Policy (2019) and Environmental Assessment Code of Georgia.

This ESIA Report was prepared for JSC Wind Power by the “WEG Envi Consulting Ltd.”

Table 1-1 Contact Information

Project implementing company	JSC Wind Power
Legal address of company	Zurab avalishvili Street No.12, 0179, Tbilisi, Georgia.
Actual address of company	Zurab avalishvili Street No.12, 0179, Tbilisi, Georgia.
Address of planned activity site	Kareli Municipality. Surroundings of villages Ruisi, Urbnisi, Sagolasheni, Breti, Saqasheti and Sasireti
Type of planned activity	Construction and operation of the Ruisi Wind Farm

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1.2 Objectives and Scope of the NTS

The present document is the Non-Technical Summary (NTS) for the Ruisi Wind Power project (the Project). Following the EBRD ESP 2019 requirements, a set of documents, the so-called "ESIA Disclosure Package", has been developed and is being disclosed to the Project's stakeholders and the public. It consists of the following:

- ESIA report, which provides description of the project, assessment of the expected environmental and social impact associated with the project and proposed mitigation measures;
- Environmental and Social Action Plan ("ESAP"), which includes a series of actions required to achieve compliance of the Project with EBRD's Performance Requirements (2019), Georgian regulatory requirements and international good practice;
- Non-Technical Summary ("NTS"), a summary of the ESIA report;
- Stakeholder Engagement Plan ("SEP"), a description of how the stakeholders will be involved throughout the project, including the timing and methods of engagement, the information to be disclosed, the disclosure language(s), and the type of information asked to the stakeholders;
- Land Acquisition and Livelihood Restoration Framework ("LALRF"), which includes a series of commitments, procedures and actions being undertaken in order to compensate the people, households, and communities impacted by the land acquisition process necessary for the Project.

The ESIA Report contains detailed information on the Project and the environmental and social issues considered. The ESIA Disclosure Package includes various appendices and specialist studies which inform the ESIA report. This document (NTS) provides a summary in non-technical language of the findings contained in the ESIA Report.

The purpose of the present document, which represents the Non-Technical Summary, is providing information about the Project in a simple, non-technical language easily comprehensible for general public. The NTS presents short description of the project itself and the summary of the expected potential impacts on the environmental and the socio-economic settings, as well as the mitigation measures which will be taken to avoid or reduce these impacts.

2 Project Overview

2.1 Project Rationale and Benefits

This present Project envisages Construction and Operation of 206 MW Ruisi Wind power plant (Ruisi WPP) on the territory of Kareli and Gori Municipalities in Shida Kartli (Inner Kartli) region of Georgia.

Expected benefits from the construction of the Ruisi Wind Farm are the following:

- Increase of domestic power generation and reduction of dependence on power imports; contribution into improvement of energy-safety and energy-independence.
- Development of power supply system in Georgia, increase of power supply reliability.
- Development of renewable energy sources, diversification of power sources.
- Reduction of CO2 emissions.
- The project will have significant and regular input in Kareli and Gori Municipal budgets (property taxes).
- Employment opportunities during construction: Participation of local population and contractors in construction of wind power station.
- Employment of local population during operation of the wind farm.

2.2 Project Location

The Ruisi project site is located in Kareli and Gori districts of Georgia, in the region of Shida Kartli located in the central part of Georgia on the Shida Kartli plain, 100 km west from Tbilisi. The site area covers around 13 000 ha within perimeter of more than 45 km between villages of Ruisi-Bebnishi-Sagholasheni-Breti-Dzlevijari-Sakasheti-Arashenda.

2.3 Project Description

2.3.1 Facilities

The proposed Project will consist of 46 WTG arranged in a specific arrangement across the proposed site to ensure the most efficient capture of the prevailing wind.

The basic facilities comprise:

- 46 WTG
- Substation that converts the output from the turbines to a voltage that is appropriate for connection with the National Grid
- Network of underground cables connecting WGT to the substation
- Internal access roads
- Transmission line connecting to the national grid

The main specific component of the WPP plants is a wind turbine.

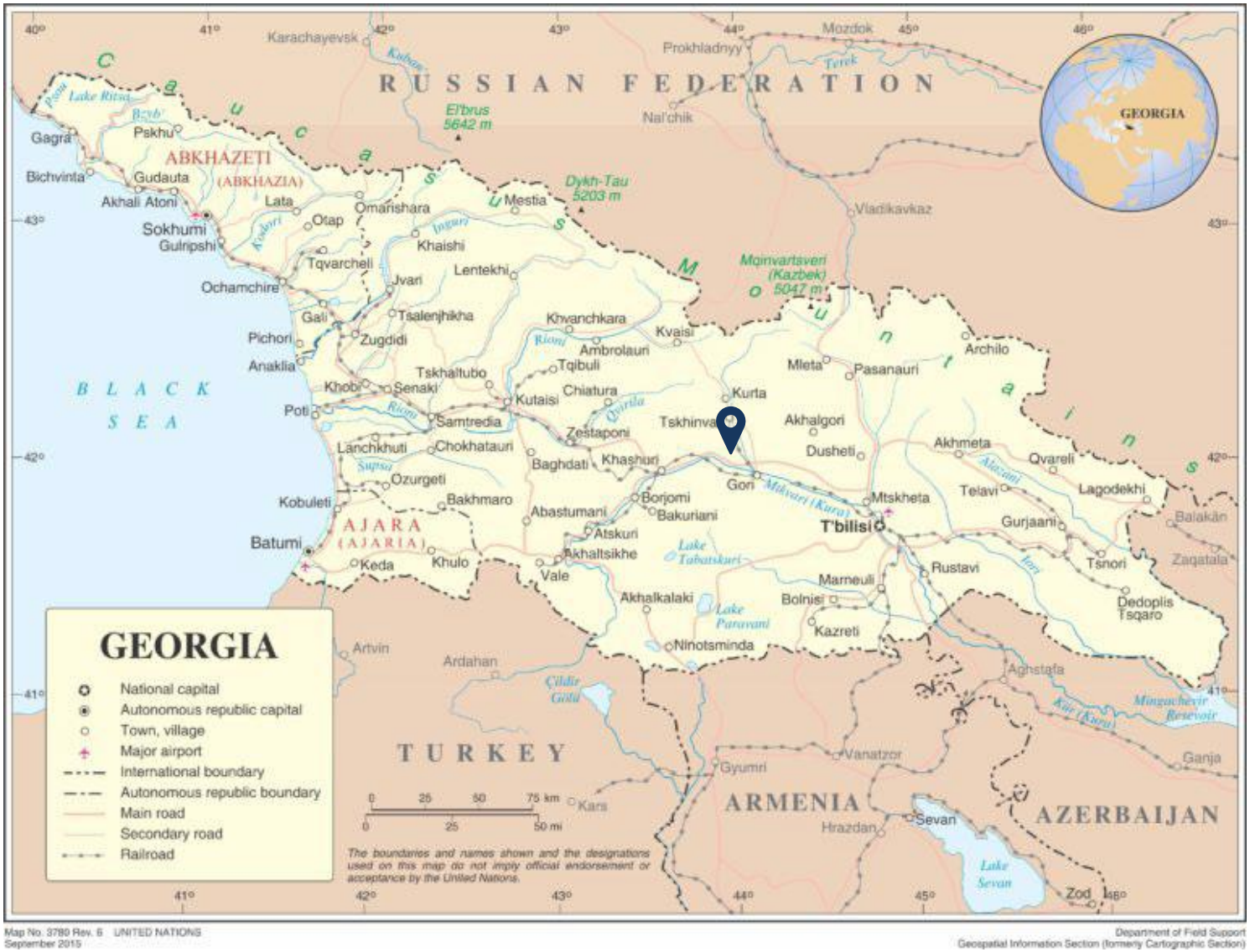

Figure 2-1 Location of the Ruisi wind farm over Georgia political map

A typical wind turbine consists of a tower and a nacelle containing a rotor and measuring equipment. The rotor consists of blades and axes, connected to each other by bearings. The blades are moved by the wind and transmit this force to the bearing, which is connected to a multiplier that increases the speed of the axis. Mechanical energy is transferred from a multiplier to an electricity generator, which converts it into electricity for later transfer into the grid.

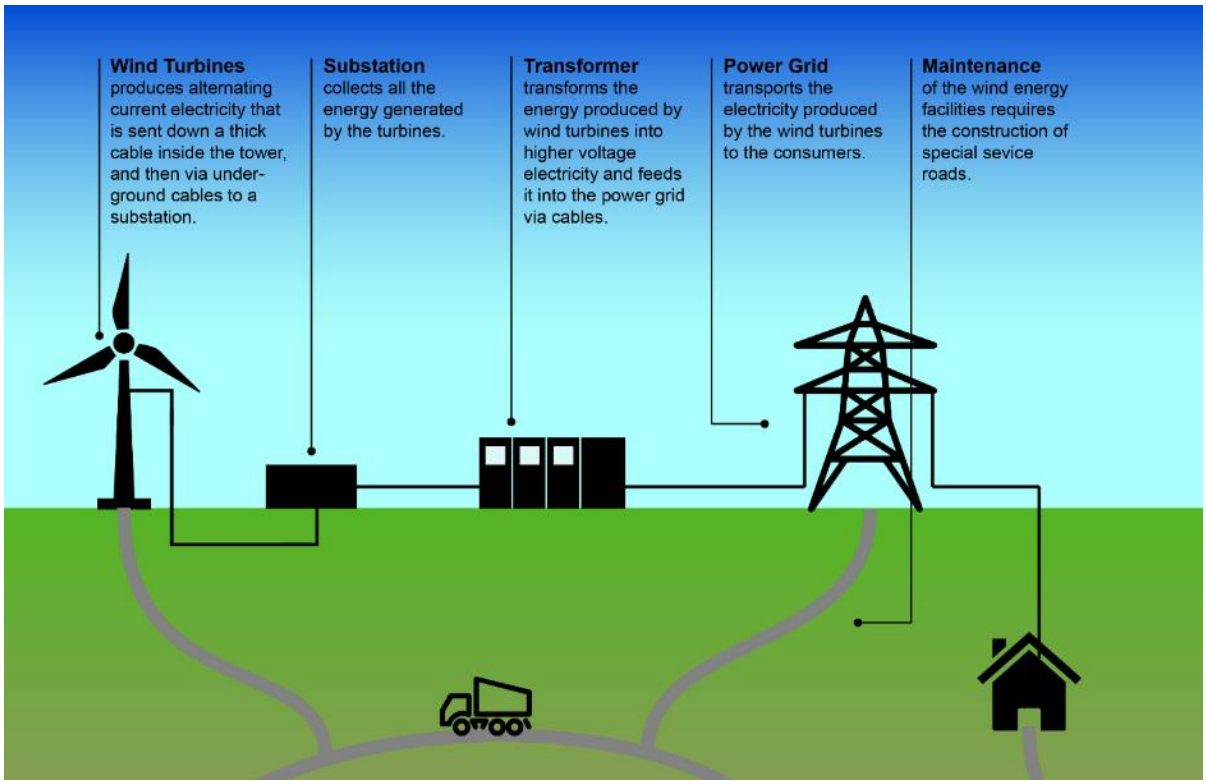

Figure 2-2 Technological scheme: facilities of the WPP

The exact models of the turbines are not known at this stage. However, the geometrical parameters are in general determined:

- height of turbines – 150m
- rotor diameter – 163m

During the construction works following supporting facilities will be arranged:

- Assembly Yards
- Site compound and storage area
- Construction Camp

Figure 2-3 Wind Turbine

Ruisi substation is a connection point of the wind farm, internal power lines hub and steering and communication centre of the facility. Substation has been situated in an agricultural plot west of Ruisi village. Location of the substation implies modification of existing route of 220 kV overhead line SS Khashuri 220 to SS Gori 220. The line shall be cut and directed 2,1 km north towards the substation to pass through 220 kV bay in substation. Therefore, the part of Ruisi substation (220 kV bay) will function as a technological part of Georgian State Electrosystem (GSE) - system being at the same time a connection point of the wind farm.

2.3.2 General Layout

The project layout is shown on Figure 2-4. The site is partly located at the ridge north of Ruisi at the elevations of between 657 to 845 masl. For the turbine clusters located in this area there are best wind resources due to specific terrain hypsometry and higher elevation. Other clusters of the project are located in agricultural terrains around Dzevljari and Sakasheti villages. The site located on ridge north of Ruisi consist of conglomerates, sandstones, marls and clays. These are a reliable basis for all kinds of civil structures, and the fragments could be used as a building material for bed arrangement. However, it should be taken into consideration that also areas affected by geological processes of a physical and biological weathering, and unstable landslide areas can be encountered within the project boundaries. The average topsoil layer equals to approximately 30-50 cm. Norther part of the project area situated west of Sakasheti is a typically small agricultural land with rich soils and landmarking picture of vineyards and orchards. The area of Dzevljari is, again elevated and occupied by crops.

Considering its nominal total power, the wind farm occupies naturally large area with entire villages inside its perimeter. The wind farm will dominate over the nearby E60 motorway with its scale and elevated exposition. However, micro-siting of wind turbines extensively uses a terrain leaving large distances between wind turbines and clustering wind turbines into the groups.

Generally, the site is nearly free of any large vegetation forms. The patch of the artificial pine forest is located in south-east corner of the site, next to the E60 motorway. These are large open spaces of pastures and fields separated by field bounds, channels and ground roads. The site has constraints that could influence the siting of wind turbines. Most of all, close vicinity of villages Ruisi, Breti, Dzevljari-Sakasheti shall be taken into account in context of noise distribution and shadow flickering.

There are four access points located directly on E60 motorway.

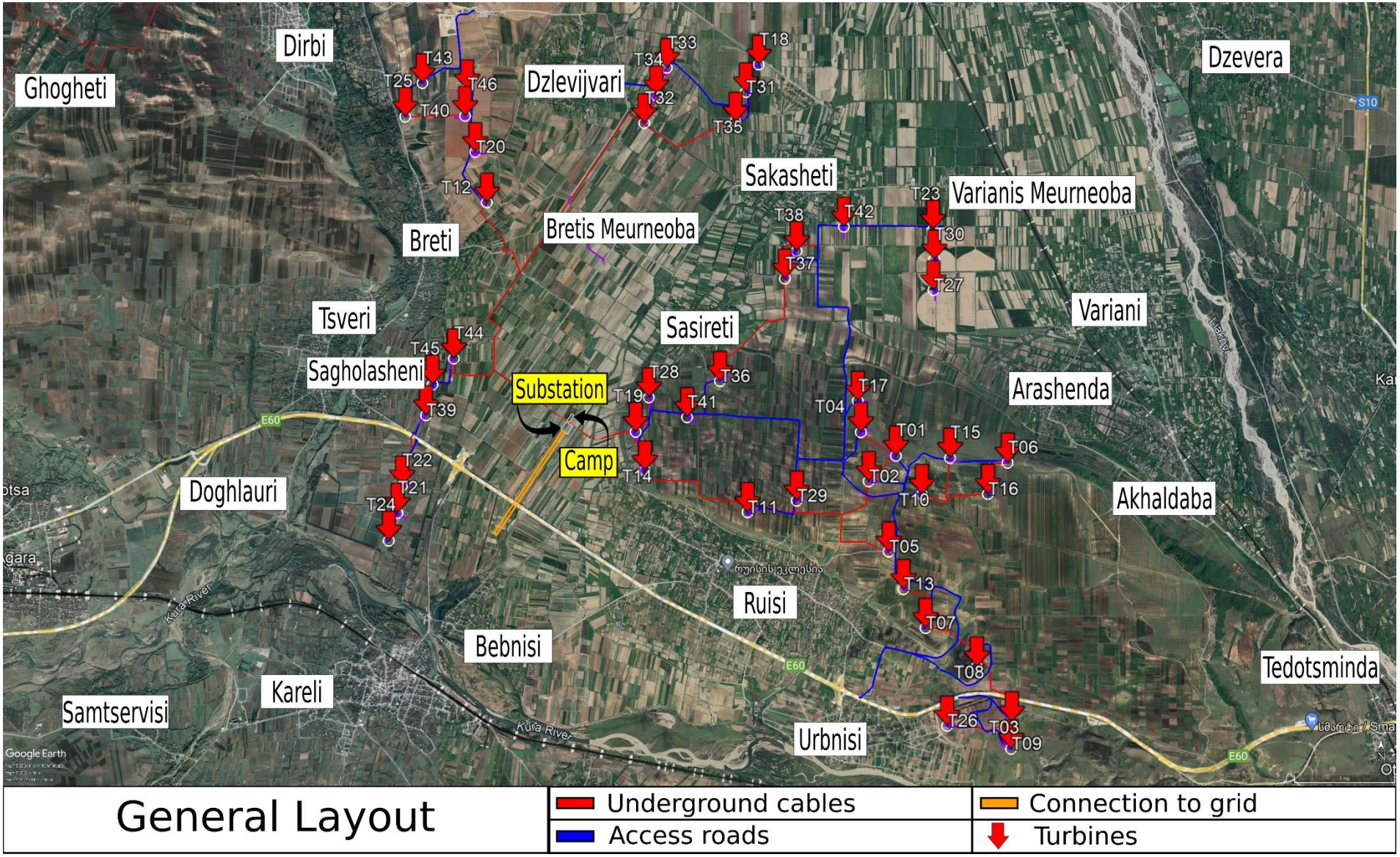

Figure 2-4 Project Layout

2.3.3 Construction & Commissioning

Construction and commissioning will be the contractual responsibility of the EPC Contractor.

Pre-installation method is a technique for large wind turbines. It assumes unloading of components and assembly of bottom tower sections with use of smaller crane so that the working time of main crane is optimized and related cost reduced.

The turbine foundation pad is a prepared area where the wind turbine's foundation is constructed. It serves as a stable base to support the weight of the wind turbine tower and facilitate the installation process. The assembly yard and the turbine foundation pad are two separate areas within the wind farm project. The assembly yard is the temporary workspace where the turbine components are assembled before being installed, while the turbine foundation pad is the specific location where the foundation is built.

During the construction process, after the turbine components are assembled in the assembly yard, the main crane, which is used for lifting and installing the components, will be brought to the turbine foundation pad. The main crane will then be positioned and used to lift the assembled components onto the foundation, completing the installation of the wind turbine. The main crane is brought to the pad to install the assembled turbine components onto the foundation.

In this project enough space have been designed in each assembly yard to deliver the components directly to the location. Therefore, the interim storage yard is not required. Nevertheless, the location of site compound nearby substation for 2 main cranes has been indicated on the topographic map. Typical compound area(s) including welfare facilities and waste management for the use of the installation team is(are) required.

During the construction of Ruisi WPP, 200 people will be directly employed. This will comprise a combination of Project Company, EPC Contractor and Sub-Contractor staff of which around 60% will be local residents. Recruitment for the Project will be advertised locally, and preference will be given to nationals matching levels of skills requirements.

At this stage, the exact location of the workers accommodation for either the EPC contractor and sub-contractor are not confirmed. However, as much of the workforce is planned to be recruited from the local community, these workers will not require dedicated accommodation. However, for other or foreign workers, accommodation area (camp) is proposed and shown on the map 2-4. On site, a temporary camp will be set up for emergency accommodation and will be suitable to the weather in the area. It is stated in the ESIA that the necessary facilities and standards of all worker accommodation/camps will be in accordance with the IFC/EBRD Worker Accommodation: Processes and Standards (2009).

2.4 Project Operation

The operations and maintenance activities of the WPP will be undertaken by JSC Wind Power

The operation of the Ruisi WPP will be monitored and controlled from a remote location. The operational activities will be limited to, such as:

- Daily operation of equipment to ensure energy yield
- Maintenance works (electromechanical equipment maintenance and housekeeping) to optimise energy yield and life of the system;

- Remotely activated turbine shutdown during excessive wind speeds or according to the regime and conditions defined by flickering modelling for particular turbines;
- Monitoring and management of operations in relation to bird and bat as will be defined by the biodiversity monitoring and management plans. Development of Monitoring plans is required in ESAP.

At this stage, it is understood that a workforce of about 10-15 staff will be engaged to carry out operation and maintenance activities of the wind farm.

It is expected that there will not be dedicated operational accommodation and that staff will be required to make their own arrangements for living accommodation.

3 Baseline Environmental and Social Conditions and Expected Impacts

3.1 Project Impact Zone and Sensitivities

Full details of receptors, local sensitivities, land users and site baseline are described in the Environmental & Social Impact Assessment (ESIA) Report for the Project.

3.1.1 Social and Cultural Heritage (CH) Receptors

Construction and Operation of 206 MW Ruisi Wind power plant (Ruisi WPP) is planned on the territory of Kareli and Gori Municipalities in Shida Kartli (Inner Kartli) region of Georgia, located 100 km west from Tbilisi. The site area covers around 13 000 ha within perimeter of more than 45 km between villages of Ruisi-Bebnishi-Sagholasheni-Breti-Dzlevijari-Sakasheti-Arashenda.

The land plots needed for the project development belong to the following villages of Kareli Municipality – Ruisi, Urbnisi, Sasireti, Breti, and villages of Gori Municipality – Sakasheti and Shindisi.

However, the potential impact zones (flickering, noise, transportation etc.) is broader and includes territories that belong to the inhabited localities of Shida Kartli – Gori and Kareli municipalities:

- Villages of Kareli Municipality: Ruisi, Urbnisi, Sagholasheni, Dzlevijvari, Bebnisi, Breti, Bretis Meurneoba, Dirbi, Sasireti
- Villages of Gori Municipality: Sakasheti, Sakasheti IDP Settlement, Varianis meurneoba, Arashenda, Shindisi

The residents of all these villages have been considered as important stakeholders.

Directly at the project sites (location of WGT and other basic and temporary facilities, access roads and connection cables), except for a few places, there are no aboveground monuments or visible remains of any archaeological object and/or artefact with the mark of cultural heritage anywhere. However, due to the number of important archaeological-architectural monuments and objects referred in the scientific literature, which are abundantly recorded and largely studied in the area under consideration by the project, it is requested in ESIA to ensure the professional supervision of an archaeologist during the earthworks and to develop and apply the chance finding procedure. The basic scheme for the chance-finding procedure is presented in the ESIA. The chance-finding procedure defines the rules for stopping works and further actions to be implemented by EPC contractor, archaeological authorities and JSC Wind Power in case if archaeologically valuable objects are excavated during the earth-works.

3.1.2 Environmental Receptors and Restriction Zones

Ruisi WPP is not located within or in the immediate vicinity of protected areas. The Liakhvi Nature Reserve is the nearest protected area, which is situated in more than 28 km north-east from the limits of the project area, upstream of the Patara Liakhvi River in Tskhinvali Region occupied by Russian army. The Borjomi-Kharagauli National Park is situated in 35 km, and its part – Nedzvi Managed Reserve are in about 29.5 km west off the limits of the project area; the Ktsia-Tabatskuri Managed reserve is situated in about 36 km south-west, and the Algeti National Park is in about 33 km south-east of these limits. Both these protected areas are behind Trialeti Mountain Ridge on the another bank of the Mtkvari River. The border of the Tbilisi national park lies on the other side of the Aragvi River about 62 km east of the limits of the construction area.

In addition to the national system of protected areas, there are Special Protection Areas (SPAs) in Georgia. These are the Emerald Sites and Important Birds Areas (IBAs). There are three Emerald sites, one SPA and one IBA in the project region.

The minimal distance between the eastern limits of the project area and the western border of the nearest designated Emerald Site GE0000046 Kvernaki Ridge is about 14.7 km. Two proposed Emerald sites GE0000034 and GE0000049 are in 19 km to the north-west and 21 km to the west respectively.

The project area is not located within or close to the important bird migration routes and sensitive ecological habitats.

Project site is not located close to airports, any specific restriction zones or sanitary protection zones usually established near the water-supply headworks, surface water objects and resort areas.

3.2 Expected Social Impacts

Land take related impacts (physical and economic displacement) and nuisance (noise, shadow flicker, visual impacts, dust emissions) were assumed as main potential impacts associated with the project and residential areas are seen as the major sensitivities in the project area.

3.2.1 Physical and Economic Displacement

The project is implemented on the territory, which is relatively remote from residential areas and concerns private agricultural lands (annual crops and gardens) and state lands, but not homestead lands. The project does not envisage physical resettlement of the population from the place of residence.

Social impact is mainly expressed in agricultural land loss and economic displacement. Most of the private land area (up to 40%) is used for growing grain crops, up to 30%- for growing various kinds of vegetables and the rest (up to 30%) is orchards. Small part of the state land represents pastures.

The Impact Scale is not yet precise, as the final configuration of the farm and exact location of turbines should be specified[1]. Taking into account the current configuration of turbines (46 turbines) and selected areas for them, it will be necessary to occupy approximately 165 registered land plots, most of which (152) are private plots. Apart from that, the land required for expansion of access roads and laying of

[1] The Detailed Design (DD) will be completed in May 2024 and the precise impacts will be assessed based on DD

connecting cables should be acquired. The number of impacted private plots can be reduced by minor adjustments to the turbine layout (fine tuning). When the mast is located on several plots, moving the mast by just a few meters may result in a decrease in the number of plots (instead of 2 or 3 plots, it is possible to place the turbine mast within only one plot). Such micro-correction works are currently underway and the number of affected plots and affected households is likely to be significantly less at the Detailed Design (DD) stage.

Reducing the total number of turbines will also help to reduce the number of impacted private plots. It is expected that at the stage of the Detailed Design, in the final configuration less than 46 turbines will remain (most likely - from 33 to 46).

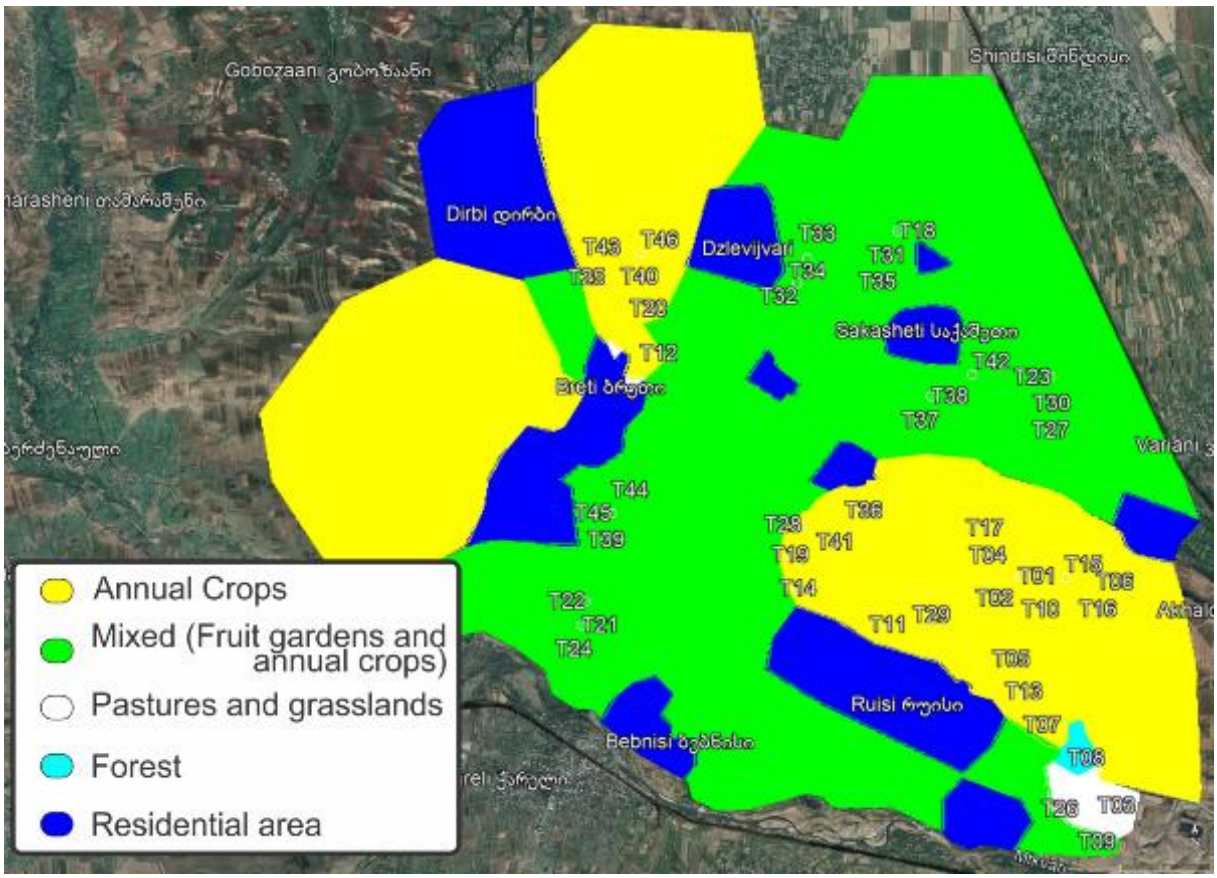

Figure 3-1 Land Use Map

According to the preliminary assessment, in total 165 land plots needs to be acquired for placing wind generator turbines. Out of this 152 are private plots (138 registered, 8 still under registration and 6 more registered plots are owned by business companies). Some households own several land plots and many plots are co-owned by several PAPs. In total 234 households and 3 companies will be affected. Most of the affected land plots are agricultural (148). Two of the affected plots have residential status, although they are used for only agricultural needs. Two of the affected land plots are of non-agricultural category.

No residential or other houses and buildings are affected and no physical relocation of the AHs is planned. The only affected structure (apart from the fences): on one land plot a non-residential 267.m2 ancillary building and well is located. Most part of the affected land plots is owned by private households (234 AHs). However, some plots are under the ownership of large agricultural companies, which are classified as a specific category of stakeholders (businesses). JSC Wind Power takes commitment to proceed with land acquisition through amicable negotiations only, meaning that land will be bought from willing sellers only, and unwilling sellers will not be impacted.

Consistent with ESAP action 1.12, the reputable specialized consultant will be mobilized under ESAP action 5.1 to extend the land owners/land users database to all land plots planned to be used by the Project, and the LALRF will be develop into a Land Acquisition and Livelihoods Restoration Plan (LALRP) including:

- Land permanently or temporarily required by the Project
- Land whose use will be limited (and consequently whose value will be decreased) by the wind turbines noise (ref. IFC general EHS guidelines) or flicker effect (ref. IFC windpower guidelines 30hours/30 minutes rule), or by the overhead line presence.
- Land owners (public or private, physical or moral, legal or legalizable)
- Land users (formal and informal, taking into account seasonal changes in land use) and employees/workers who made a livelihood on affected land
- Vulnerability of land owners or users, and required assistance
- Known land ownership or land use issues & grievances
- Fixed infrastructures (drainage or irrigation canals, buildings, roads…)
- Acquisition mode (lease or purchase) and status.
- Land acquisition and livelihood restoration payment: identified parties, calculation basis, negotiation result and payment status
- Integration in a GIS with indication of readiness for entry (see ESAP Action 1.12)
- Legal ownership changes (legalization, heritage…)

Detailed records of all aspects of all (individual or collective) amicable land acquisition agreements and involuntary livelihood losses/damages compensation, through the database prepared under ESAP action 5.1. Detailed monitoring of all supporting activities, including in particular: land entry authorizations, grievances management, assistance to vulnerable stakeholders, and gender specific measures.

3.2.2 Community Health, Safety, and Security

3.2.2.1 Noise Impacts

Noise modelling was carried out with worldwide accepted German CadnaA software. Modelling has been carried out for two scenarios (height of turbine 105 m. and 150 m). It should be considered that all calculations above were made for the case of simultaneous operation of all noise sources.

The results of the modelling show that the noise impacts in case of two scenarios differ insignificantly. The main conclusion is as follows: in overall, as the modelling results have evidenced, the noise level generated during the construction and operation phases of the wind turbines at the nearest residential buildings does not exceed the day and night noise standards established by the legislation of Georgia.

During the operation phase, the level of noise caused by the wind turbine operation will not exceed 43 dBA at the nearest buildings found in villages located in the project area. This noise level is lower than the day and night noise standards established by the legislation of Georgia; Noise modelling results for the wind turbines construction phase are given for the nearest residential houses in village Sakasheti, which are located closest the two turbines. The noise level at the nearest building in case of simultaneous installation of two turbines will not exceed 40 dBA. This noise level is lower than the day and night noise standards established by the legislation of Georgia and international regulations (in particular, IFC Standards);

Noise modelling has been also performed for the commercial zone adjacent to the project area. As the modelling results showed, as a result of the operation of the WPP (under both scenarios), the noise levels within the commercial zone do not exceed 55 dBA. In the sections of the commercial zone, which are closest to the area where the stations are located, the noise level may reach 52 dBA. In all other cases, noise levels are much lower (ranging from about 40-45 dBA); Since the permissible norm of noise for commercial / industrial purpose buildings is 60 dBA according to the national legislation and

international regulations, exceeding the permissible norm of noise in the mentioned area is not expected as a result of modelling.

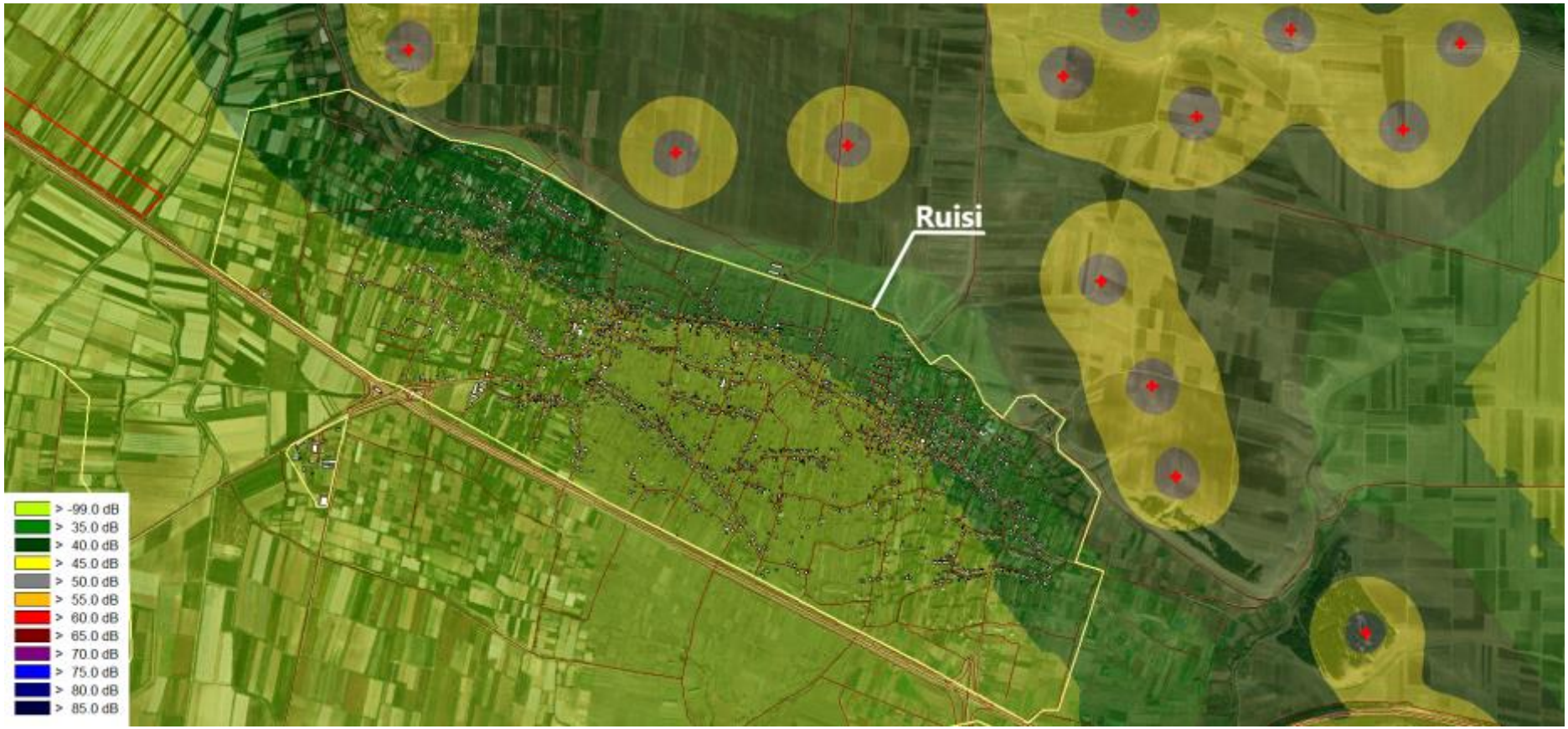

Figure 3-2 Example of noise modelling diagrams: Propagation of noise in the vicinity of Ruisi village - Turbine Height - 150 m.

3.2.2.2 Shadow Flickering Impacts and Electromagnetic Waves

Shadow flicker occurs when the sun passes behind the wind turbine and casts a shadow. As the rotor blades rotate, shadows pass over the same point causing an effect termed shadow flicker. The magnitude of the shadow flicker effect varies both spatially and temporally, and depends on a number of environmental conditions coinciding at any particular point in time, including, the position and height of the sun, wind speed and direction, cloudiness, and proximity of the turbine to a sensitive receptor. Shadow flicker may become a problem when potentially sensitive receptors (e.g., residential properties, workplaces, learning and/or health care spaces/facilities) are located nearby, or have a specific orientation to the wind energy facility.

At present the final configuration of the turbines is not specified. The number of turbines, physical dimensions, exact coordinates and orientation will be specified later at the detailed design stage. All of these factors are important for precise modelling of the shadow flickering effects. Under these circumstances, at present the shadow flicker assessment is done as a worst case scenario analysis. The preliminary analysis shows that a substantial amount of residential houses may be imposed to certain extent to the shadow flicker effects.

The JSC Wind Power takes a commitment that at the detailed design stage the comprehensive shadow flickering modelling will be conducted to describe the impacts for the actual situation (final configuration of turbines and exact values of all parameters affecting the level of the shadow flickering). The outcomes of the comprehensive modelling will be used to match the most efficient mitigation measures out of the alternatives presented below. The special shadow flickering mitigation plan will be developed based on the results of modelling.

Below we provide a proposed strategy for mitigating shadow flickering impacts and the priority of mitigation measures.

1 **Removing the turbines with the highest flickering impact**. The final number of turbines and configuration is still under consideration. In case if finally it is planned to reduce number of WTG positions then WTGs with the largest SF influence could be removed (results of total amount of flickering caused by each WTG are presented in the calculation appendix). The shadow flickering impact is not the only factor or the most important factor during the process of selecting final location of turbines: the wind conditions and technical-economic feasibility will be the main factors. However, the cost of alternative mitigation measures (e.g. temporary shut-downs) will be also taken into account. **This option of mitigation will be taken into account by JSC Wind Power at the stage of Detailed Design and procurement of the finally selected models of the turbines.**

   The IFC Environmental, Health, and Safety Guidelines, for Wind Energy will be taken as a criteria: If it is not possible to locate the wind energy facility/turbines such that neighboring receptors experience no shadow flicker effects, it is recommended that the predicted duration of shadow flicker effects experienced at a sensitive receptor not exceed 30 hours per year and 30 minutes per day on the worst affected day, based on a worst-case scenario.

2 **Rotor diameters.** During the selection of final models of turbines, if it will be possible, select the turbines with less rotor diameters or hub height for the positions with the highest shadow flickering impacts. This is not an obligatory requirement, but an option to be considered at the **detailed design stage**.

3 **Temporary Shutdowns of turbines.** JSC Wind Power takes commitment to develop a schedule for shutting down turbines to achieve acceptable S/F impact. Precise modelling for developing the schedule is not possible at this stage, as final precise locations, number of turbines and orientation of blades, as well as particular models of turbines are not yet

determined. The final schedule will be developed during the first year of operations, based on actual monitoring data. As a preferable option the company plans to use “shadow flicker protection system”. However, final decision will be taken during consultations with the suppliers at the stage of Detailed Design. At the detailed design stage, when all technical parameters (locations; orientation; dimensions etc.) are finally specified, additional modelling of shadow flickering will be conducted. Results of the additional modelling will be used for developing preliminary versions of the “shut down schedule” and automotive or manually regulated shut-down schemes and will be taken into account during procurement of turbines and automated shut-down systems. Further, based on actual monitoring data, the final version of the “shut-down” schedule will be elaborated.

4 **Screening through landscaping**. At the detailed design stage, when all locations and orientation of turbines, as well as particular models are specified, JSC Wind Power will conduct additional modelling of shadow flickering and determine those locations, where installation of “blinds” or planting tall trees may efficiently serve as the screens protecting the receptors from shadow flicker impacts. The feasibility of arranging the screens depends on the number (%) of the residential houses and other receptors that could be protected.

5 **Compensations.** In parallel with the schedule for shutting down turbines, the JCS Wind Power will develop compensation packages to off-set the residual flickering impacts. It is assumed that the schedule for shutting down turbines will allow significantly reducing the severe flickering impacts, however, the certain residual impact of low and medium magnitude may still remain unmitigated. On a basis of monitoring data, permanent consultations with the residents of affected villages and grievances collected through GRM, the affected residents eligible for compensation will be determined. The amounts for compensation will be determined based on consultations and negotiation with the affected residents.

During the planning mitigation measures, priority will be given to the options avoiding and minimizing actual impacts.

WPP project are not associated with the significant impacts of electro-magnetic fields and related health issues. Wind turbines can cause interference to signals of radio frequency. Mechanisms of such impact are diffraction, reflection and scattering.

Wind turbines may disrupt operation of cellular or TV towers that are in close proximity. In this case, the telecommunication towers of Magti and Beeline is 500 m away, and therefore impact on them is minimized. In case of the first alternative which is discussed in the ESIA, turbines are located close to these towers and their operation could be jeopardized. Alternative 1 was discarded to this and some other factors. As already mentioned, the risk for this impact is minimal in case of the preferred option.

Electro-magnetic field of 33kV lines is negligible (the protection zone comprises 1m from the outermost cables), and all interconnecting lines are distanced from residential areas.

3.2.3 Landscape and Visual Impacts

Construction works will cause certain visual changes in the landscape because the arrangement of construction sites, operation of building machinery and stockpiling of building materials will be required. In any case, this impact will be localized and temporary. Permanent impact will be connected only to permanent infrastructure of the Project – turbines and substation. Visual impact could be described considering the layout of project sites regarding visual receptors, that is if sites with modified landscape are within their views.

Wind turbines will be noticeable both from the nearest settlements (village. Ruisi, Aradeti, Tsveri, Variani settlement, etc.), as well as from a relatively long distance - mainly on the Ruisi districts of the

international highway (from Gori tunnel to Agara section). Due to the peculiarities of the terrain - most of the turbine masts will not be visible from the highway at all. Only part of the turbines will be visible on Ruisi sections of the track and in essence, this view does not differ substantially from the view of Gori WPP, which directly borders the project area. Practically, Gori wind turbine landscape will be transformed into new WPP turbine landscape. The Georgian population has got used to the landscape of Gori WPP and it does not cause negative associations (no complaints have been ever received by operating company, local authorities or MEPA).

Landscape and visual impacts of the construction phase will be mitigated with use of the following measures:

- Less visible sites will be identified to locate temporary structures and store materials and waste;
- Proper sanitary and ecological conditions will be maintained during the construction and operation phases;
- Reinstatement will be implemented after completion of construction works.

Mitigation measures that could reduce operational impact due to presence of wind turbines are not practicable. Residual visual impact is not significant and as practice shows (on Gori WPP section) - does not cause negative reaction of the population and tourists moving on the highway.

3.2.4 Other Social Impacts

The construction and operation of the wind farm will positively contribute to the economic development both at local and national levels. Besides, the Project will improve energy security of the country and reliability of the power supply. Local communities and municipalities will be impacted due to taxes (property tax) collected at local level as well as the use of local resources and services. Energy security and reliability of electricity supply will increase in the country because Ruisi WPP will produce major portion of electricity during the period when the energy system suffers power shortage. Therefore, this plant will notably contribute to the elimination of seasonal power shortage and reduction of dependence on import.

The project will have an overall positive impact on the lives of local residents. During the construction of Ruisi WPP, 200 people will be directly employed, of which 60% will be local residents and their average salary will be no less than the average salary in Georgia. The company is ready to undertake the obligation to employ the local population directly from the neighboring villages in the conditions of minimum qualification requirements.

10-15 people will be employed during the operation of the station, this number does not take into account the number of indirect employees for operation of the substation and/or transmission line when connecting to the network. 70% of the employees will be qualified personnel in the field of Engineer, electrical engineer, mechanic, electrical mechanic, civil engineer, heavy equipment operator and other related professions.

The planned project will have minimal impact on transport infrastructure. This will be limited to impact on local roads connecting villages, which will be used to access the Project Area and implement construction works. Road traffic may increase in certain periods during the construction phase. Construction works should be planned in a manner to minimize impacts. The following measures will be implemented to achieve this:

- Local population will be informed about timing and period of planned works;

- All damaged road sections will be rehabilitated as soon as practicable in order to ensure their availability to population;
- Specially designated personnel (flagman) will control the traffic if needed;
- Complaints/ grievances will be recorded and adequately addressed.

As of the operation phase: impact will be similarly minimal at this stage, and will mainly result from maintenance works of turbines and substation.

Nuisance associated with the construction activities (noise, dust generation, emissions etc.) is insignificant, temporary and could be easily mitigated to the acceptable level through monitoring and adherence to the good construction practices.

3.3 Expected Environmental Impacts

3.3.1 Air Quality

Most of the planned facilities and construction grounds of the Wind Farm are quite far from the residential buildings. The site of the substation and the site allocated for the construction camp is more than 1.5 km away from the nearest residential buildings (village Ruisi). As for the turbines, their vast majority (29 turbines) will be distanced from the nearest residential buildings by more than 700 m. 15 of the 46 turbine sites are more than 500 m away, but less than 700 m from the nearest residential buildings. Only 2 turbine sites (#25, 43) are located less than 500 m away. The smallest recorded distance refers to turbine No. 25 and is 408 m from village Dirbi premises.

Construction and operation activities of wind power project are passive in nature and do no result in any key air emissions. However, construction activities may increase level of dust and particulate matter emissions, which will temporarily impact ambient air quality. Moreover, the use of machinery and equipment are expected to be a source of noise and vibration within the Project site and its surroundings.

As part of the ESIA, appropriate mitigation measures have been identified for dust suppression and control and which will be implemented during the construction phase. This includes for example regular watering of all active construction areas, proper management of stockpiles.

The atmospheric air quality will not deteriorate in the operation phase. During the operation phase, only the vehicles of the service personnel may be driven around the area, and the operation of the diesel generator will not be necessary, as the substation will be supplied directly with the power generated by the turbines. The project envisages the use of diesel generators only as reserve units during the unforeseen events.

3.3.2 Water Resources

The Mtkvari River and two other large permanent rivers – Didi Liakhvi and Eastern Prone are outside the Ruisi WPP project area. The Didi Liakhvi River lies in more than 3.5 km to the east outside the borders of the project area. There are a few remnants of the smaller rivers Bretula and Bebiula. They are entering the project area via irrigation canals and are ending in the irrigation canals and ditches.

Most of the territory is cut by irrigation canals and ditches, presented by main channels of Zemo (Upper) Ru, Didi Ru and Sadedoru, and numerous small distribution channels. All water courses within the study area are integrated into Saltvisi Irrigation System.

The rivers are located quite far from the project site and no impacts are expected. The only surface water receptors within the construction impact zone are the branches of the irrigation channels. During the consultations with the Georgia Amelioration (amelioration authority in Georgia), it has been revealed that no indirect impacts on the channels are envisaged.

For most of the turbines and project facility sites the established level of the groundwater is significantly below 3m. At few sites, where the groundwater level is higher than 3m, this is a local, shallow groundwater, which is not used for drinking and has no connection to the deeper groundwater aquifers and rivers. During the construction works the ground will be excavated to a depth of 3m. So, no impact on groundwater is expected on most construction sites, while on the few areas where groundwater levels may be less than 3m, it can be said that, first, it is a local receptor, insignificant in terms of resources, and second, the impact will be temporary, reversible, localized and less intense. No special mitigation measures are needed to protect these objects. It is sufficient to comply with the construction norms and standards and waste management according to the plan.

During the construction of turbine foundations and road widening, particular special attention will be paid to the pollution preventive measures:

- In accordance with the Emergency Response Plan, the construction company will be equipped with fuel spill prevention and containment appliances (sorbents).
- The existing roads will be used as access roads, and when they are widened, the drainage channels provided along the roads will not be directed towards the main channels.
- Extremely strict control will be applied for the trouble-free operation of the construction machinery to prevent even minor fuel or oil spills. This applies both to the construction works (mainly) and to operation of the machinery used for maintenance and repairs in the operation phase.

3.3.3 Biodiversity

3.3.3.1 Protected Areas and Habitats

The biodiversity baseline assessment concludes that the Project site in general is of low ecological significance and sensitivity. The assessment identified several flora, fauna and avi-fauna species within the Project site most of which are considered of least concern and common to such area habitats.

Ruisi WPP is not located within or in the immediate vicinity of protected areas, Special Protection Areas (SPAs), Emerald Sites and Important Birds Areas (IBAs). The project area is not located within or close to the important bird migration routes and sensitive ecological habitats.

The study area is densely populated. The residential areas and home gardens of nine villages occupy up to 12% of the territory of the Ruisi WPP project. The dense network of unpaved field roads is developed within the project area and neighbourhood in addition to the well-developed network of the municipal asphalt roads. Actually, there are two kinds of agriculture lands – the irrigated fruit gardens and vegetables plantations, and the non-irrigated arable land occupied by cereal fields (mainly wheat and maize) and fields of a sunflower. Lesser part of the area is used as pastureland for cattle of locals. In addition, small plots of artificial pine groves, remnants of former windbreaks are situated near the Ruisi and Breti villages. The agriculture lands are fragmented in not large parcels of different ownership and occupied with different crops.

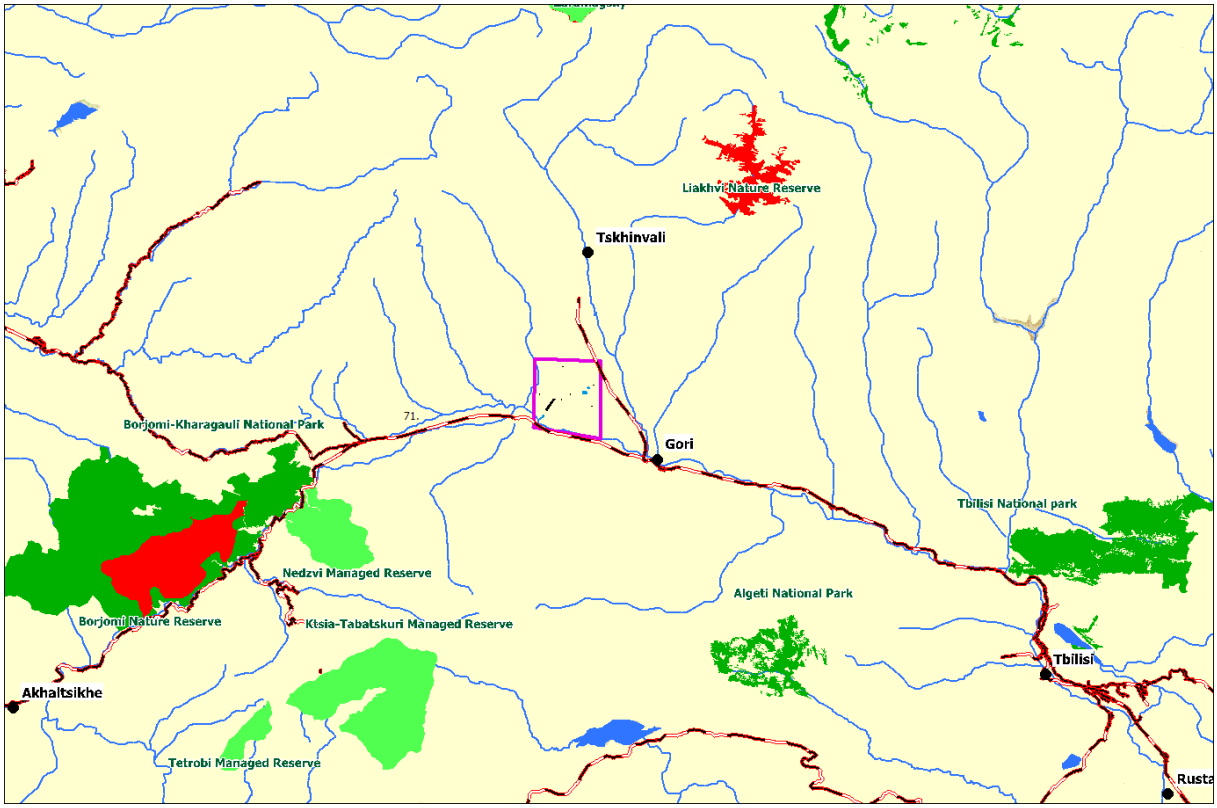

Figure 3-3 Protected areas established under national law and Ruisi WPP Area

State Nature Reserves – red polygons, National parks - dark green polygons, Managed reserves - light green polygons, Protected landscape – orange polygon; Project Area – magenta polygon.

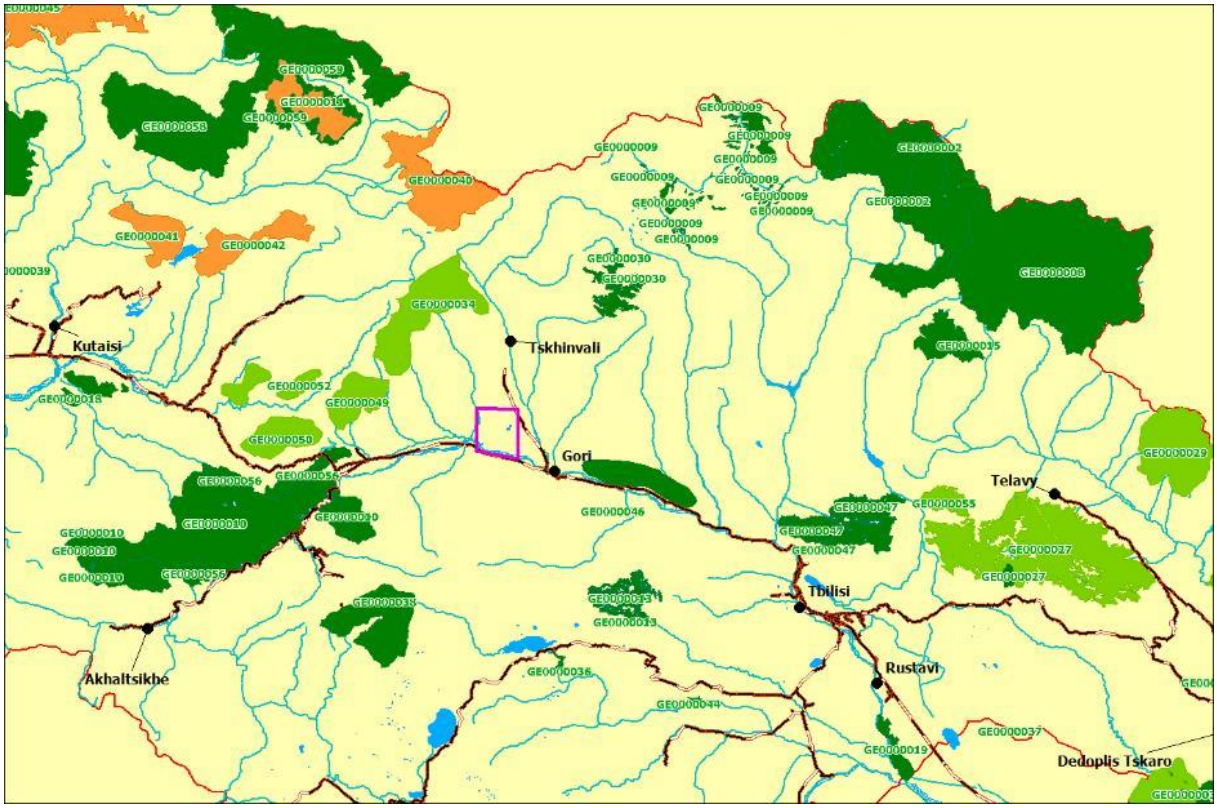

Figure 3-4 Emerald sites and IBAs near Ruisi WPP Area

Designated Emerald sites - dark green polygons, the candidate sites – orange polygons and the proposed sites - light green polygons; Project Area – magenta line.

3.3.3.2 Flora

The assessment of the flora and habitats of the EAAA according to the CHs and PBFs criteria and conditions defined by the EBRD PR6 (2019) and Guidance Note 6 (2022) does not identified any critical habitats or priority biodiversity features of flora and habitats within the studied territory.

Based on the results of detailed botanical research, following conclusions can be made:

- Most of the project area (over 90%) is occupied by agricultural fields. In terms of protection of rare plant species, these areas have no ecological value.
- Critical Habitat Assessment does not identify any habitats or plant species that could classify as a Critical Habitat or Priority Biodiversity Feature according to the EBRD PR6 (2019) criteria.
- No species of plants from the Red List of Georgia or globally threatened species of IUCN Red List are found in the project corridor.
- It should be also mentioned, that the species protected under the Bern Convention and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 1975; universal) do not grow within the project corridor either.
- There are no high sensitivity habitats within the project corridor. Only one habitat of medium value is identified (the small, artificial pine grove at Turbine #8).

The pine grove at Turbine #8 site is artificially planted. After determining the exact coordinates of the turbine and access road, identification and cadastral description of the trees to be cut will be carried out. It is practically impossible to restore and maintain the former natural groves in the state they were before construction (especially if the habitat is also affected by other factors). Therefore, it is recommended and mandatory to implement offset or eco-compensation measures, which implies the restoration of equivalent forest habitats. The same approach is recommended for artificial pine forest:

- For each cut tree, 3 new saplings will be planted, in agreement with the municipality and the Ministry of Environment Protection and Agriculture.
- In the above-mentioned artificial pine grove, the trees are withering, which might be caused by the spread of parasites. As a compensatory measure, plant protection specialists will study the target habitat and develop a plan for rehabilitation measures. Immediately after the completion of the construction, the company will start implementing the rehabilitation plan developed by the specialists.

Five species endemic to the Caucasus have been found in the study area. During the construction phase, eradication of the mentioned endemic species of plants from the environment or significant damage to the population is not expected. It is possible to destroy individual specimens or individual groups of plants, but there will be no damage to significant populations. The identified endemic species are not range-restricted according to the EBRD Guidance Note 6, and destruction of some specimen would not reflect on their occurrence.

In addition, a conservation programme before starting the construction shall be prepared for five rare plant species that are endemic to the Caucasus

3.3.3.3 Fauna

Based on the data collected during zoological field surveys carried out within the limits of Ruisi WPP project area and adjacent territories as well as all available literature data, the faunistic importance of the Project territory should be considered in general as a low.

42 species of mammals, belonging to 25 genera of 11 families of six orders, are noted in documents or can be supposed, according to their requirements to habitat, as those that occur within the area of the Ruisi WPP construction. Among them are three species that are listed in the Georgian Red List (2006) as Vulnerable (VU), and one more added in result of assessment done in 2020. There is only one protected by law mammal species, part of the key-habitat of which lies within the construction area - Brandt's Hamster (*Mesocricetus brandti*).

All records of mammal species within the project area are summarized below:

- Hedgehog (*Erinaceus concolor*) was recorded at WTG 43
- Molehills were found in ten locations at WTG 08, WTG 11, WTG 26, WTG 32, WTG 40, WTG 41, WTG 49, WTG 51, WTG 53, WTG 56.
- Rodent burrows (*Microtus sp. = M. socialis or M. arvalis*) found at the 46 WTGs construction sites (See Table 5 below), six large colonies of the Social vole (*Microtus socialis*) are seen at WTG 03, WTG 14, WTG 20, WTG 38, WTG 40, WTG 44 – at the west edge of the not irrigated arable lands occupied by wheat.
- Brandt's hamsters (*Mesocricetus brandtii*) burrow recorded at WTG 03 and WTG 08 and between them in the arable land.
- Among large mammals most numerous was Red fox (*Vulpes vulpes*). Tracks of this species was fixed at 19 construction sites of Ruisi WPP project.
- Eurasian Badger (*Meles meles*) was seen in three points WTG 21, WTG 30 and WTG 37. At WTG 21 one adult badger and three young were fixed 4 July 2022.
- Golden Jackals (*Canis aureus*) was recorded in four places. Faeces of jackals found at WTG 28 (this WTG is rejected). Voice of jackal packs heard at WTG 22 (one pack), WTG 43 (two packs), and WTG 52 (one pack).
- One cat (*Felis sp*.), undefined up to species level, was seen at WTG 43.

According to the results of the zoological field surveys, there are no sites of the Ruisi WPP project which can be considered as potentially important from mammals' biodiversity preservation standpoint.

Nine species of reptiles are noted in documents or can be supposed, according to their requirements to habitat, as those that occur within the Ruisi WPP project area. One species among them - Mediterranean Tortoise (Testudo graeca) - is included into the Georgian Red List and IUCN Red List as Vulnerable (VU). The presence of this species within the study area is supported by published scientific issues and by experts' opinions. Following records of reptile species have been made during the zoological surveys for the Ruisi WPP Project:

- Three-lined Lizard (*Lacerta media*) recorded at two WTGs – WTG 04 and WTG 09.
- Grass snake (*Natrix natrix*) recorded at three points WTG 10, WTG 15 and WTG 57 on the left bank of the Eastern Prone River.
- Schmidt's Whip Snake (Dolichophis schmidti) was seen in the same places at WTG 10, WTG 15 and WTG 57, and between WTG 10 and WTG 15.

There are no sites of the Ruisi WPP project area those can be considered as potentially important for reptilian fauna.

Three species of amphibians are noted in documents or can be supposed, according to their requirements to habitat, as those that occur within the Ruisi WPP project area. Among them no one species is listed in the Georgian Red List. European Green Toad (Bufotes variabilis) is listed in the

IUCN Red List as a Data deficiency (DD) and Shelkovnikov's treefrog (Hyla orientalis former Hyla arborea) is not evaluated (NE) in the IUCN Red Data List. Presence of these species within the study area is supported by published scientific issues and by direct observation.

It can be presumed that four fish species can be found in small rivers and in canals and ponds of irrigation system within the Ruisi WPP project area. They include: Kura bleak (Alburnus filippii), Riffle minnow (Alburnoides bipunctatus), Caspian freshwater goby (Planticola cyris) and Mosquito fish (Gambusia affinis). The presence of the same species and Crucian carp (Carassius carassius) can be expected in the artificial ponds. All these species are not listed in the Georgian Red Data List and in the IUCN Red Data List as threatened category (CR, EN, and VU). Kura bleak and Caspian freshwater goby are endemic to the River Mtkvari basin.

As an overall, summarising conclusion based on the results of the zoological field surveys, we can state that there are no sites of the Ruisi WPP project which can be considered as potentially important from animal biodiversity preservation standpoint.

3.3.3.4 Avi-Fauna

For the study area, 96 species of birds are noted in documents or can be supposed, according to their requirements to habitat, as those that occur within the Ruisi WPP project area and immediate vicinity. Four species among them are listed in the Georgian Red List. All are passage migrants. Of them, one species – Lesser Kestrel (Falco naumanni) is listed as a Critically Endangered (CR), three species Imperial Eagle (Aquila heliacal), Levant Sparrowhawk (Accipiter brevipes) and Long-legged Buzzard (Buteo rufinus) as a Vulnerable (VU). According to 2020-year assessment, one species - Steppe Eagle (Aquila nipalensis) is noted as an Endangered (EN), and one - European Turtle-dove (Streptopelia turtur) as a Vulnerable (VU). Two species are listed as Near Threatened (NT) - Pallid Harrier (Circus macrourus) and Meadow Pipit (Anthus pratensis).

It should be highlighted that the Egyptian Vulture (Neophron percnopterus), which is listed in the IUCN Red List and in the Georgian Red Data List as an Endangered (EN), have not been registered during the field studies in 2022 and 2023. There is neither habitat preferred by this vulture within the Ruisi WPP project area and immediate neighbourhoods, nor feeding ground of this species in this side of the Transcaucasian lowland. However, occasional visits of the Egyptian vulture cannot be excluded for sure, while nearest nest of it is known on Kvernaki ridge in about 20 km from the border of the project area.

From 96 species of birds recorded in the project area and immediate neighborhoods (the study area) by the ornithologist, 22 are year-round residents, which are nesting in the study area and present throughout of all seasons of the year. Among them, no one species is listed in the Red Data Lists (Georgian or IUCN). 57 species are breeding species, including year-round residents and summer breeders. None of them is listed in the Red Data Lists as threatened (CR, EN or VU). The Project Area is used by various species of birds-of-prey and passerines as a stopover site on passage. 74 species pass through the study area during migration, 23 species appear there only during migrations and 14 species are winter visitors. Presence of these species within the study area is supported by direct observations and by published scientific issues.

Based on the results of the ornithological surveys, the importance of the study area from the ornithological point of view should be classified as “low”. Breeding and wintering avifauna of the Ruisi WPP Project Area may be considered as a poor because it is presented mainly by widely distributed, quite common and numerous bird species which are typical elements to the fauna of this region of Georgia – Shida Kartli. Especially, the community of the breeding birds presented by widespread and common species.

The whole territory or separate parts allocated for the planned establishment of the Ruisi WPP does not apply to the any IBA's or Important Bird Areas. Ruisi WPP Project Area situated outside of the major migratory corridors and so-called "bottle-necks" of long-distance migrating birds of prey. The project area is lying on the secondary way of birds' migration. In autumn, within the project area, part of the migratory birds is flying along the Mtkvari River valley from east to west, and part is flying from north to south crossing the river. Mainly, birds migrate in dense and dispersed flocks, seldom as solitary individuals. The WPP poses more danger for those moving along the latitudinal axis – from east to west, and in a lesser extent for birds moving from north to south.

Based on the results of complex ornithological studies for which large raptors were target species, carried out within the limits of Ruisi WPP Project Area as well as in adjacent areas and analysis of collected data, it is possible to conclude that:

- The species composition of birds in the area under consideration is very poor. The basis of the local Avifauna is represented by common widespread and numerous bird species that are typical for this region of Georgia. The species composition of nesting birds is especially poor. Only about 1/4 of the total number of bird species found in Georgia are recorded here. Most of these bird species are non-permanent elements in the local Avifauna, and are observed for a short time and in small numbers during seasonal migrations, wintering or occasional movements.

- Ruisi WPP Project Area and adjacent areas situated outside of both the rich on Caucasian endemism sites. No endemic bird species were recorded here.

- The level of human activities in Ruisi WPP Project Area and adjacent territories is very high. In this regard, the level of anthropogenic load on the birds inhabiting this area should be assessed as a high, but in some sites of study area, especially in tree-less parts of study area as well in and around villages and along roads the level of human disturbance should be considered as very high.

Summarizing all the materials collected, we can draw the main conclusion - the construction and operation of the planned station should not have any serious negative impact on the avifauna. Both at the national level and, moreover, at the regional level.

Unfortunately, among all animal group birds and in first turn large-sized and medium-sized soaring bird species have the highest risk of mortality on the wind turbines and other technical constructions, including transmission power lines and various towers and pylons, typically located at the territory of wind parks or in adjacent areas. To minimize the potential negative impacts on the birds and sensitive breeding, feeding, resting and stop-over habitats, a number of methods have been developed and are being used in different countries. In this connection, for the effectiveness of proposed mitigation measures, the most serious attention paid to the problem of preventing bird death at transmission power lines. The overview reviews of environmental issues analyzed for the selection of most optimal and effective measures for the Ruisi WPP Project area.

Thus, in the case of the implementation of this project, already at the construction stage and subsequently during operation of the Ruisi WPP the following actions/measures are recommended for implementation:

- The early conclusions regarding impact on birds will be confirmed before operation starts through additional survey and collision risk modelling following an internationally recognized guidance (Birdlfie or SNH)
- Systematic control of the territory of Ruisi WPP
- Wind turbines and access power lines marking – making lines more visible to birds

- In order to reduce the mortality of the birds that migrate at night or during bad weather conditions that collide with the cables of the transmission line it is recommended to use Bird Flight Diverters.

3.3.3.5 Bats

In the context of WPP projects. bats (*Chiroptera*) are one of the most sensitive groups of the species, as wind turbines can kill and harm bats during their operation (*"Guidelines for consideration of bats in wind farm projects, Revision 2014"*). According to the bat survey carried out for Ruisi WPP project, 19 species of the bat occurring in the project area according to the field surveys and literature sources (see ESIA Volume 2, Annex 4 "Bat Survey Reports"). Of them, the presence of 17 bat species has been confirmed during field surveys.

Construction impacts: Bats are extremely restricted in finding shelters for breeding colonies. Suitable for the roosting shelters – trees hollows, caves and abandoned buildings are of great importance for their populations. Wintering and maternity roost can be destroyed if some trees with hollows will be felled during the clearing works (tree cutting) during preparation works in not proper time.

Operation impacts: The most significant impact of operating wind turbines on bats is direct killing, caused due to collision and/or barotraumas. In addition to the risk of direct collision, the wake effect drastically modifies the air pressure near the rotating blades, enlarging the risk zone and causing fatal barotraumas to flying bats.

Based on the results of the field works, the most important recommendations at this stage are:

- To develop and implement a program/schedule for temporary shut-downs of those turbines that may have critical impacts. The detailed recommendations for critical turbines is given in ESIA.
- Maximally avoid artificial lightening, use it where and when necessary. In the wind farm area should use lightings that do not attract insects. Use a shielded lighting-unit that does not emit lights above the horizontal. Avoid lamps emitting wave-length below 540nm and with a correlated color temperature more than 2700K.
- The nacelles should be made inaccessible for bats as much as technically possible and feasible.
- Maximally avoid or put limitations on cutting trees. If cutting the trees is unavoidable and necessary for wind power plant construction and safe operation, the tree-cutting activity should be done according to the following steps: (i) to select those trees which should be cut; (ii) check these selected trees by bats-specialist on the potential roost-occurrence and mark those trees which will be considered as potential roosts for bats; (iii) Marked potential roost-trees are not allowed to cut from 20 May until 15 August and from 1 December until the end of February, and bats-specialist should attend cutting of marked potential roost-trees in the allowed period of time. If the roosting bats occur in the cut trees, immediate measures need to be taken to identify alternative roosts for these individuals or colonies; and (iv) non-marked trees can be cut any time during the year.
- Post-construction monitoring should be carried out as recommended by the Resolution 8.4 adopted at the 8th meeting of parties of the Agreement on the Conservation of Populations of European Bats (EUROBATS).

These recommendations that are based on the bat surveys of the ESIA stage might be revised, further developed and/or adapted taking into consideration the results post-construction monitoring.

4 Environmental & Social Management

Under the ESAP agreed with the lenders, the Company undertook, to:

- Implement an environmental and social management system adapted to the nature of the Project and the size of the company. The management system will be based on the Environmental and Social Policy developed by the Company, and appropriate procedures and instructions will apply to all operational aspects of wind farms. The commitment of the Company's management will allocate adequate resources to the environmental and social management of the Project.
- Establish an Environmental and Social Management System (ESMS) for the implementation of the construction activities, based on an E&S policy aligned on EBRD E&S policy and signed by the Sponsor's top management. The ESMS shall include procedures for the management of design change and for the management of non-compliances, as well as an E&S monitoring mechanism.
- Develop and run an environmental and social management system (structured according to ISO9001 –14001 standards) for the operation period. The ESMS shall include the E&S policy and occupational H&S procedures, procedures for ESAP implementation and change or non-compliances management, and an E&S monitoring mechanism.
- Based on the ESIA EMP, on the detailed design, on the permitting authority requirements and on the ESAP, mobilize a reputable and experienced consultant to prepare a consolidated E&S Management and Monitoring Plan (ESMMP) for the construction and operation periods. The ESMMP must include a stand-alone section that "E&S specifications for contractors" that defines the contractor's obligations throughout the early-activities, construction and operation, as required by the Project's E&S documents, including the ESAP. The “E&S specifications for contractors" must be included in the contractor's contractual obligations. Organize/monitor their effective implementation.
- Prepare and disclose to workers a HR policy aligned on and covering all Lenders PR2 Requirements. The system will ensure the principles of non-discrimination and equal opportunities, and full compliance with national standards with regard to child and pregnant or forced labour will be respected for own and external workers.
- Develop an OH&S policy and implement an OH&S management system that ensures compliance with all internationally recognised health and safety standards and national legal requirements through procedures and instructions. In particular, the system will ensure that all own and external staff are properly trained, undergo medical examinations and are provided with personal protective equipment appropriate to the tasks to be performed. Some procedures will constitute health and safety plans for various operations on wind farms, such as working in confined spaces, working at heights, working with electrical equipment, etc.
- Conduct shadow flicker and noise modelling and visual impact assessment according to final design and provide mitigation plan agreed with EBRD, based on the results of modelling.
- Retain an experienced company with international experience to (i) undertake additional birds’ surveys meeting SNH or Birdlife guidance, including a collision risk model.
- Adaptation of the Stakeholder Engagement Plan (SEP), which will define the rules of communication with all project stakeholders, as well as a complaints mechanism for both own and external employees and external stakeholders.
- Implement the necessary measures to avoid or reduce excessive environmental impact.
- Report to the EBRD on the results of the project on a regular basis (as required by the Bank).

- Maintaining the Project website, where all the most important documents related to the Project will be posted and regularly updated, including permits, environmental monitoring results and other information related to the Project.
- As part of the environmental and social management system, the Company will develop procedures for monitoring key performance indicators, which, in addition to purely operational factors, will also include monitoring accidents and non-normal activities, complaints and others.

5 Stakeholder Engagement Plan (SEP)

A Stakeholder Engagement Plan (SEP) has also been developed for the Project that will be implemented by the Developer. The SEP identifies in details the stakeholders that are relevant to the Project to include local communities, national governmental and permitting authorities, local government, Non-Governmental Organizations (NGOs) and other. The SEP identifies previous stakeholder engagement activities undertaken for the Project and the key outcomes of such engagement activities.

A systematic approach to identify affected stakeholders has been used. The stakeholders identified have been classified into three categories:

- Impacted Stakeholders (A) – those who can be potentially affected by different type of the potential impacts of the project.
  - The Impacted stakeholders are individuals or group of people that can be potentially affected by the Projects' environmental and social impacts (like land-take; physical or economic displacement; health and safety issues; shadow flicker, noise and other nuisance etc). Potential environmental and social impacts of the Project have been assessed in the ESIA. Such impacts can directly or indirectly impact project stakeholders.
- Interest-based Stakeholders (I) – the Project's beneficiaries at local and country level, Stakeholders concerned with any of the procedures set by the Project, national and international non-governmental organizations and the interested part of the civil society.
  - Interest-based stakeholders are groups or organisations that are not adversely affected by the Project but whose interests determine them as stakeholders. In addition, there are stakeholders outside the affected area, which can be identified through "interest-based" analysis. These are usually government authorities, NGOs and national, social and environmental public-sector agencies whose area of interest is related to the Project, or where such organisations are undertaking projects with communities in these areas.
- Decision Making Stakeholders (D) – those who are involved in the development of the project and its financing. In addition, this includes the regulators such as MEPA.

The SEP also identifies in detail a future stakeholder engagement strategy and plan which identifies activities that will be undertaken throughout the Project duration, which provides an opportunity for all stakeholders, including local communities, to express their views and interact with the Project.

The SEP also includes a stakeholder grievance mechanism that is responsive to any concerns and complaints from affected stakeholders and communities.

6 Grievance Mechanism

The land acquisition, which is important activity at the pre-construction stage, is often connected with complaints from the affected households (AHs), who may be not satisfied by received compensations and changed conditions. The Project's activities (during construction, commissioning and operation) may result in potential nuisance and environmental and social impacts (noise; shadow flicker; dust emissions etc.) and related complaints of stakeholders. To address all those issues and potential complaints from affected parties it is required to establish a grievance redress mechanism (GRM). The aim of the grievance mechanism is establishing a system to receive, record, study and facilitate resolution of the stakeholder's concerns and grievances about the Project's environmental and social performance.

The overall accountability for the grievance mechanism will be held by the Project Company, although responsibility for elements of its implementation may be contractually delegated. The grievance mechanism for the Project will comply with the following principles:

- The purpose of the grievance mechanism procedure will be clarified at the outset;
- The process will be scaled to the risks and impacts of the Project;
- The process will be transparent and accountable to all stakeholders by putting it into writing, publicizing it and explaining it to relevant stakeholders;
- The grievance mechanism will be made clear, understandable and easily accessible by providing information in the local language and orally where communities cannot read;
- Complaints or concerns will be rapidly resolved;
- The mechanism will not involve any costs nor retribution associated with lodging a grievance; and
- Precautionary measures such as clear non-retaliation policy, confidentiality measures and safeguarding of personal data collected in relation to a complaint, as well as an option to submit grievances anonymously will be in place.

Any comments or concerns can be brought to the attention of the company verbally, or in writing (by post or e-mail), or by filling in a grievance form included in the SEP. The grievance form will be made available in the offices of local administration, offices of the EPC Contractor and Engineer, Project Information Centers (PIC) and Community Liaison Officers (CLO) of JSC Wind Power.

The GRM will be structured as two tier system: a) tier 1 for immediate (at site) resolution of relatively simple cases that do not require engagement of top management; b) tier 2 for resolution of more complex cases and complaints, which were not resolved at tier 1 stage. Grievance Process and Timeline is provided in Table 6-1 below:

Table 6-1 Grievance Process and Timeline

STAGE	TIMELINE
Tier 1: Initial Grievance submission/reporting	
Grievance Received/Submitted	-
Grievance logged and acknowledged	Within 1 week of grievance being submitted
Grievance investigated	Within 2 to 3 weeks of grievance being submitted*
Proposed resolution conveyed to grievant	Within 30 days of grievance being submitted

STAGE	TIMELINE
Tier 2: Grievances that were not resolved through tier 1 mechanism	
Actions to re-assess grievance/propose new solution/inform Grievant of final decision	Within 2 weeks of notification of dissatisfaction by Grievant
In the event that a grievance cannot be resolved between the two parties a mediator will be involved i.e. local leaders who understand the culture and practices within the Project site.	Within 2 weeks of notification of dissatisfaction by the Grievant.

***Note**: Where complex grievances, or other factors are extending the investigation time, the Grievant will be informed of this delay and advised of an updated expected timeline for response.*

7 ESIA Disclosure & Contact Details

7.1 Disclosure of the EBRD ESIA Package and Public Consultations

The following methods will be used to inform stakeholders about the on-going stakeholder consultations during the ESIA process:

- Both the English and Georgian versions of the ESIA package will be disclosed on EBRD in May 2024. English version of the ESIA package will be disclosed on the EBRD web-site, while the Georgian and English versions on the JSC Wind Power's web-site. NTS and project leaflets will be made available in Gori and Kareli Municipal offices.
- Project Leaflets and Brochures – will be distributed to vulnerable groups and will be available to those who cannot attend ESIA disclosure sessions. The NTS, Leaflets and brochures, which will be made available in the municipal offices in Gori and Kareli Municipalities, will include a summary of the negative and positive impacts of the project and information regarding the grievance mechanism;
- Public consultations will be carried out in villages of Gori and Kareli Municipalities during the period of June-July 2024. Both categories - impacted and interest-based stakeholders will attend the meetings without any limitations. It is not required to conduct meetings in each village. Residents of several villages could be consulted during the meeting in one, most convenient site. However, it is required that communities of all villages within the project area are informed about the planned meetings and will get access for the meeting site. As minimum 6 public consultation meetings are planned in June-July 2024.
- Individual consultations, bilateral meetings and meetings in focus-groups will be conducted with the impacted-based stakeholders under the LRLR process starting from disclosure of the LRLRF and till completion of the land acquisition process.

7.2 Disclosed E&S Documents

Disclosure package of the ESIA documents includes:

- ESIA
- LALRF
- Non-technical summary (NTS)
- SEP
- ESAP

Public disclosure of the ESIA package will be undertaken as required by Lenders (ESP 2019 PR 1 and PR 10). The disclosure sessions will involve key stakeholders as identified in this SEP. The intention of the disclosure will be to present the outcomes of the ESIA process and to advise regarding key mitigation and management measures, including particular elements of the SEP such as the grievance mechanism and how it can be accessed.

The ESIA package will be disclosed in May 2024. English version of the ESIA package will be disclosed on the EBRD web-site, while the Georgian and English versions on the JSC Wind Power's web-site.

The hard copies of the ESIA Non-Technical Summary, LALRF and SEP (including Grievance Mechanism) translated into Georgian will be made available in Kareli and Gori Municipal Offices and in office of JSC Wind Power.

7.3 Disclosure process

The ESIA Non-Technical Summary, LALRF and SEP (including Grievance Mechanism) will be disclosed to the different stakeholders (impacted and interest-based stakeholders as applicable) through public disclosure meetings. This public disclosure meeting will include but not limited to local communities, PAPs, NGOs, local authorities etc.

Public consultations will be carried out in Gori and Kareli Municipalities during June-July 2024.

Stakeholders invited to attend the consultation meetings cover all villages located within the project influence area:

- Villages of Kareli Municipality: Ruisi, Urbnisi, Sagholasheni, Dzlevijvari, Bebnisi, Breti, Bretis Meurneoba, Dirbi, Sasireti
- Villages of Gori Municipality: Sakasheti, Sakasheti IDP Settlement, Varianis meurneoba, Arashenda, Shindisi
- The meetings are planned to be conducted in the six villages directly affected by the project:
- Villages of Kareli Municipality – Ruisi, Urbnisi, Sasireti, Breti
- Villages of Gori Municipality – Sakasheti and Shindisi

The advertising notices inviting the interested parties for public meetings will be placed in Municipal Offices 2 weeks before the planned meetings. The notices will include information regarding the subject of the meeting, location, premises and date and time.

Mass media – regional and country-wide media (newspapers, TV) will be used to advertise the planned public disclosure meetings and to inform the local communities and general public about main features of the project.

During the consultation meetings the attendants will be informed about the project details (impacts and mitigations, costs and benefits etc.), as well about the GRM and communication means to deliver the comments and grievances to the project proponents. JSC Wind Power will assign a person responsible for collecting comments and grievances at this stage, while this responsibility will be carried out by the PIC on the construction and operation phases.

The grievance and comments could be also directed to EBRD and in case of such will of the stakeholders, the responsible person/PIC will assist them in lodging the comments/grievances to EBRD.