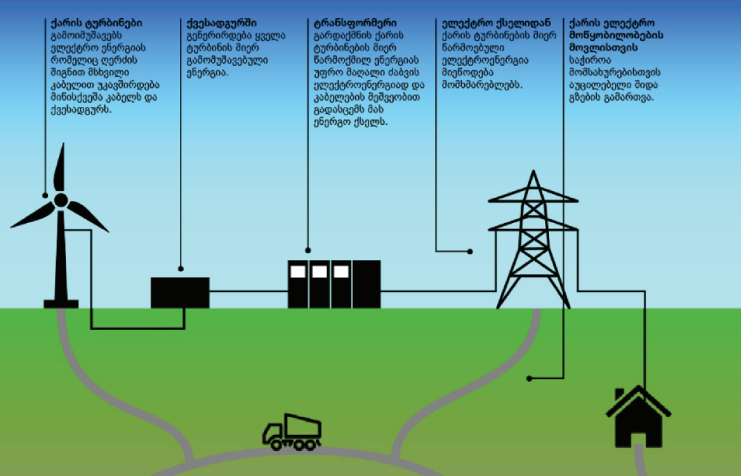




Wind Turbines

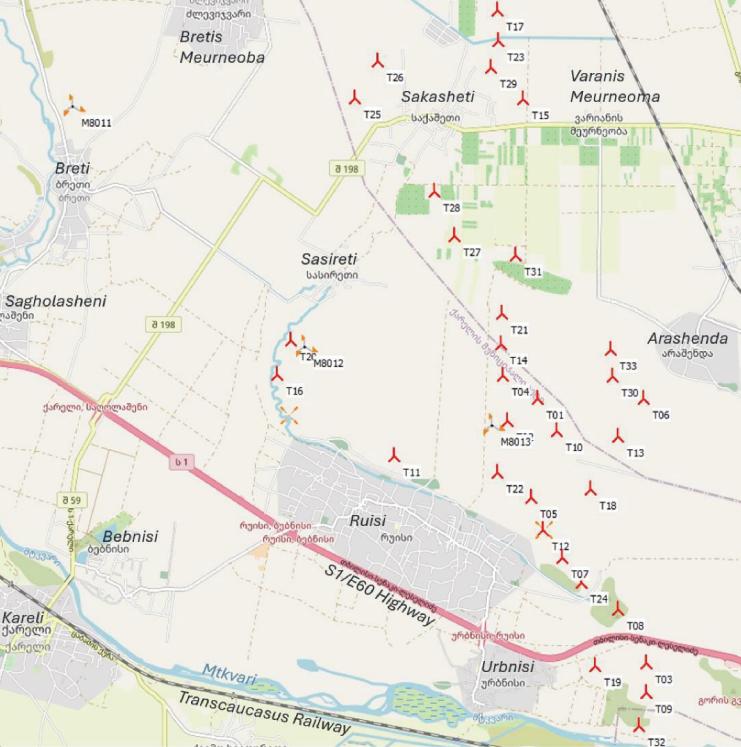
A typical wind turbine consists of two main parts: the tower and the nacelle. The nacelle houses the rotor and internal systems, including the measurement equipment. The rotor comprises the blades and a shaft, connected by bearings. When wind turns the rotor blades, the resulting torque is transferred through the shaft to a gearbox (also called a multiplier), which increases the rotational speed. This mechanical energy is then transferred to a generator, which converts it into electrical energy for transmission to the power grid. Each turbine in the Ruisi Wind Farm will have a hub height of 105 meters and a rotor diameter of 171 meters.

For questions and comments related to the project, please contact:

JSC Wind Power
Address: Zurab Avalishvili St. 12, 4th Floor, 1079, Tbilisi, Georgia
Telephone: +995 595 991 559
E-mail: info@windpower.ge

Ruisi Wind Power Project Information Center
(Local Office of JSC Wind Power)
Address: Ruisi, Georgia
Telephone: +995 591 880 575
E-mail: social@windpower.ge

Information about the project is regularly updated and available on the following website:
www.windpower.ge



The construction and operation of the Ruisi Wind Farm will be carried out by JSC Wind Power, a company fully owned by Peri LLC, which has substantial experience in the development of Georgia's renewable energy sector. JSC Wind Power is developing the Ruisi Wind Farm Project on land designated in accordance with the Memorandum of Understanding signed with the Government of Georgia on August 10, 2021. The public discussion of the scoping report for the project was held in October 2022. The discussion of the Environmental and Social Impact Assessment (ESIA), in accordance with EBRD requirements, took place between May and July 2024. Meetings with vulnerable and interested groups are ongoing. It is also worth noting that a public consultation on the ESIA, in accordance with Georgian legislation, will be held in the near future. The direct impact area of the project - specifically the placement of turbines and the substation - is located near the villages of Ruisi, Urbnisi, Sakasheti, Arashenda, and Shindisi. The substation area and the designated site for the construction camp are located more than 1.5 kilometers from the nearest residential buildings in Ruisi village. The turbines will be positioned at a minimum distance of 529 meters from the nearest homes, with most situated 1.5 kilometers or more away.

RUISI WIND FARM PROJECT
INFORMATION BROCHURE
2024

The construction and operation of the Ruisi Wind Farm are planned in the Kareli and Gori municipalities of the Shida Kartli region. The project is expected to generate a total of 206 MW of electricity, with each turbine having an average installed capacity of 6.25 MW (GOLDWIND GWH171 model). A total of 33 sites have been selected for turbine installation. An environmental impact assessment (EIA) was conducted in accordance with the requirements of the European Bank for Reconstruction and Development (EBRD). The assessment included modeling of noise and shadow flicker, as well as analysis of impacts on habitats, soil, and other environmental factors. In addition to the turbines, the project includes the construction of the following infrastructure: A substation to convert the electricity generated by the turbines to the voltage required for grid connection, an underground cable network linking each turbine to the substation, and a system of internal access roads to facilitate construction and maintenance.



Project Impacts on the Natural and Social Environment

Flora

The project area is largely free of significant vegetation. The only notable group of trees is located in the south-eastern corner of the site, near the E60 highway. The landscape primarily consists of open pastureland and agricultural fields, which are separated by field fences, irrigation canals, and dirt roads.

Fauna

The Ruisi Wind Farm is not located within or near protected areas, important bird migration corridors, or sensitive ecological habitats. It is also not situated near airports, special restriction zones, or sanitary protection zones, which are typically established around water supply sources, surface water bodies, and resort areas. In spring 2024, an additional bird survey was conducted in the project area by the independent UK-based firm WSP. As part of this effort, a Collision Risk Assessment was prepared, which re-evaluated potential risks to bird species and concluded that the area does not pose significant ornithological risks.

Cultural Heritage Sites

Within the immediate project area—including turbine locations, main and temporary structures, access roads, and connecting cables—no cultural heritage remains or artifacts have been recorded, except in a few locations. However, given the presence of numerous significant archaeological and architectural sites documented in scientific literature near the project area, it was decided to have an archaeologist supervise all excavation work.

Noise

Noise impacts from the 33-turbine master plan have been assessed for the nearest residential buildings within the project area. The study was carried out by a qualified and experienced Norwegian company. The results indicate that noise levels at all receptors will remain below the daytime limit of 55 dB. It is expected that the noise level will exceed 45 dB at night only near one non-residential building (a church), reaching 46 dB. In this case, the company will implement a turbine generation reduction mode to lower the noise to 45 dB, in compliance with World Bank standards, which are also followed by the EBRD. All 33 turbines of the Ruisi Wind Farm are equipped with serrated trailing edges (STE) to help minimize noise. Overall, modeling results show that noise levels near the nearest residential buildings during both construction and operation stages remain within the applicable day and night noise limits.

Shadow Flicker

Comprehensive shadow flicker modeling was conducted in accordance with IFC, ESH, and EBRD requirements, using the SHADOW module in WindPRO (version 4.0.540) to assess the expected impacts under real-world conditions. The results of this modeling informed the identification of the most effective mitigation measures. A mitigation strategy was proposed involving the periodic shutdown of 26 out of the 33 turbines. This approach is estimated to result in a 1.0% reduction in overall power generation. With this measure in place, the shadow flicker impact remains below the threshold set by the World Bank.

Electromagnetic Fields

The Ruisi Wind Farm Project is not expected to cause significant impacts related to electromagnetic fields or associated health concerns. While wind turbines can, in some cases, interfere with the operation of nearby cellular or television towers, in this case the nearest telecommunications towers (operated by Magti and Beeline) are located approximately 500 meters away. As a result, potential interference is considered minimal.

The electromagnetic radiation from the 33 kV internal underground power transmission cables is negligible. The designated protection zone is limited to 1 meter on each side of the cable. Additionally, all connecting lines are located at a safe distance from populated areas.

Landscape and Visual Impact

During construction, temporary visual changes to the landscape will occur due to the presence of construction sites, machinery, and stored materials. These impacts will be local in scope and limited to the construction period. Only the permanent project infrastructure will result in lasting visual changes. When assessing visual impact, it is important to consider the layout of project components in relation to visual receptors - specifically, whether the altered areas fall within their field of view. The Norwegian company Multiconsult prepared a Landscape and Visual Impact Assessment (LVIA) in accordance with the requirements of the EBRD and IFC. The assessment also followed international best practices and relevant Norwegian legislation, as Georgia currently does not have specific legislation governing landscape and visual impact assessments. According to the assessment, the wind turbines will be visible from nearby settlements and from certain sections of the international highway - primarily near Ruisi, between the Gori tunnel and Agara. However, due to the terrain, most turbine towers will not be visible from the highway. Visibility will be limited to specific stretches near Ruisi, where only some turbines will be seen. The visual appearance of the turbines in these areas will not differ significantly from that of the existing Gori Hydro-electric Power Plant, which borders the project site. In practice, the landscape featuring the Gori wind turbines will gradually transition into the landscape of the new project. The existing turbines are already familiar to the local population and do not elicit negative associations. following measures:

- Temporary structures, materials, and waste will be placed in inconspicuous locations;
- Sanitary and ecological conditions will be maintained throughout both the construction and operation phases;
- Reclamation activities will be carried out upon completion of construction.