

LIBERTY LINE

Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping

INVESTMENTS IN DEVELOPING ENERGY ASSETS (IDEA)

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Table of Contents

Acronyms and Abbreviations	7
Acknowledgements	9
1.0 Executive Summary	10
2.0 Introduction.....	14
2.1 General Information.....	14
2.2 ESIA Scoping Report – Objectives and Structures.....	15
3.0 Legal and Policy Framework.....	17
3.1 Romania Legal and Policy Framework.....	17
3.1.1 Environmental and Related Fields Legal Requirements	17
3.1.2 Legal Framework for Land Acquisition (Compensation)	24
3.2 Moldova Legal and Policy Framework.....	25
3.2.1 Environmental and Related Fields Legal Requirements	25
3.2.2 Legal Framework for Land Acquisition (Compensation)	32
3.3 International Laws and Agreements (Conventions)	35
3.4 International Best Practices, Standards And Guidelines.....	37
4.0 Project Description	42
4.1 Project Overview and Analysed Options.....	42
4.1.1 Strășeni Substation Expansion	42
4.1.2 Gutinaș Substation Upgrade	43
4.1.3 Transmission Line	44
4.2 Preliminary Multi Criteria Analysis for T-Line routes (Routes 1-4).....	51
5.0 Environmental and Socio-Economic Baseline.....	56
5.1 Environmental Baseline in Romania	59
5.1.1 Air Quality.....	59
5.1.2 Climate Changes.....	62
5.1.3 Soil and Subsoil.....	63
5.1.4 Water Resources	67
5.1.5 Natural Protected Areas.....	71
5.1.6 Forest Fund.....	77
5.2 Environmental Baseline in Republic of Moldova.....	78
5.2.1 Air Quality.....	78
5.2.2 Climate Changes.....	79
5.2.3 Soil and Subsoil.....	80
5.2.4 Water Resources	82
5.2.5 Natural Protected Areas.....	86

5.3	Socio-Economic Environment in Romania and Republic of Moldova	95
5.3.1	Project Sites' Location	97
5.3.2	Demographics And Living Standards	107
5.3.3	Public Utilities Infrastructure	114
5.4	Land Use and Ownership/Tenure	116
5.5	Archaeological and Cultural Heritage	117
6.0	Environmental and Socio-Economic Initial Potential Impacts Assessment.....	121
6.1	Introduction & Further T-Line Development	121
6.2	Physical environment.....	128
6.2.1	Potential Impact on Soil and Undersoil.....	128
6.2.2	Potential Impact On Water	129
6.2.3	Potential Impact on Air Quality	130
6.2.4	Climate Change	131
6.2.5	Potential Impact on Noise and Vibration	132
6.2.6	Potential Impact on Landscape and Visual Environment.....	133
6.3	Biological Environment.....	133
6.4	Socio-Economic Environment.....	136
6.4.1	Potential Impact On Community.....	137
6.4.2	Potential Impact on Infrastructures	139
6.4.3	Potential Impact on Cultural Heritage.....	139
6.4.4	Potential Impact on Public Health.....	140
6.4.5	Potential Impact on Occupational Health and Safety.....	141
6.4.6	Potential Impact on Land Use and Tenure	141
7.0	Structure of Full ESIA Report.....	143
7.1	ESIA Objectives and Overview	143
7.2	Draft Structure Of ESIA Report	145
7.3	Draft ESIA Time Schedule	145
8.0	Stakeholders' Engagement.....	149
8.1	Introduction.....	149
8.2	Stakeholders' Identification and Analysis	150
8.3	Disclosure of Information	150
8.4	Stakeholders' Engagement Programme.....	153
8.5	Grievance Mechanism	155
8.6	Monitoring and Reporting.....	156
9.0	Conclusion	157
10.0	References.....	159

List of Tables

Table 4-1	Routing Criteria, Sub-criteria, Assigned Values, and Weights	53
Table 4-2	Initial Screening of Four Routes Score Results	55
Table 5-1	Stakeholders Engagement Activities	59
Table 5-2	2 Main Sources of water for Vaslui county	69
Table 5-3	Natura 2000 Sites Within The 400 kV T-Line Baseline Survey Corridors	73
Table 5-4	Groundwater Reserves Inside the Baseline Survey Corridors of the Project	85
Table 5-5	Natural Areas Protected by the State Inside the Baseline Survey Corridors of T-Line Routes.....	88
Table 5-6	Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Countries, Regions and Counties/Raions Crossing.....	95
Table 5-7	Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Length Per Countries and Counties/Raions.....	98
Table 5-8	Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Distances to Neighboring Communities in RO, Inside the Socio-Economic Baseline Survey Corridor of 500 M (Each Side from the Central Axis of the T-Line)	100
Table 5-9	Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Distances to Neighboring Communities in MD, Inside the Socio-Economic Baseline Survey Corridor of 500 M (Each Side from the Central Axis of the T-Line)	104
Table 5-10	Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Distances to Neighboring Communities in RO, Inside the Socio-Economic Risk Analysis Corridor of 100 m (Each Side from the Central Axis of the T- Line).....	106
Table 5-11	Population Usually Resident by Gender, RO And MD (Inhabitants).....	108
Table 5-12	Population Usually Resident by Age - Economically Dependent Vs. In Working-Age, RO and MD.....	109
Table 5-13	Dwellings by Ownership, During the Last Official Census in RO and MD	111
Table 5-14	National Key Statistical Indicators, RO and MD.....	113
Table 5-15	Public Infrastructures Crossed by All 4 T-Line Proposed Routes, RO and MD	114

Table 5-16	Roads and Railway Networks Crossed By All 4 T-Line Proposed Routes, RO and MD.....	115
Table 5-17	Land Use by Purpose in RO and MD, for the Last Year with Registered Statistical Data	116
Table 5-18	Top 3 Land Use Type Crossed by Each T-Line Route Options in RO and MD	117
Table 5-19	Existing Cultural Heritage Sites Inside The “Socio-Economic Baseline Corridor”	118
Table 5-20	Existing Immovable Tangible Heritage – Areas of Interest in RO and MD (Sites in the T-Line Proximity).....	118
Table 6-1	Final Overall Alternate Route.....	128
Table 6-2	OHL Routes In Relation to Watercourses And Lakes – Crossings	130
Table 6-3	The Natural Protected Area Located in the OHL’s Survey Corridors.....	134
Table 8-1	Project Promoters and Donors/Lenders Where the Initial Information Package Will Be Disclosed.....	151
Table 8-2	Public Authorities Where the Initial Information Package is Recommended to be Disclosed.....	152

List Of Figures

Figure 2-1	400 kV OHL Strășeni – Gutinaș Route Options	15
Figure 4-1	Conceptual design of Strășeni ES expansion.....	43
Figure 4-2	400/2200/110 kV Gutinaș Substation	44
Figure 4-3	400 kV OHL Strășeni- Gutinaș, Route 1 (Red)	45
Figure 4-4	Border Crossing Route 1, 400 kV OHL Strășeni- Gutinaș	46
Figure 4-5	400 kV OHL Strășeni – Gutinaș Route 2 (Orange)	47
Figure 4-6	400 kV OHL Strășeni – Gutinaș Route 3 (Blue)	48
Figure 4-7	Border Crossing Route 3, 400 kV OHL Strășeni- Gutinaș	49
Figure 4-8	400 kV OHL Strășeni – Gutinaș Route 4 (Magenta).....	50
Figure 4-9	Border Crossing Route 4, 400 kV OHL Strășeni- Gutinaș	51
Figure 5-1	Air Quality Monitoring Stations in Bacău, Vaslui and Iași Counties.....	60
Figure 5-2	Erodibility Class of Soils Traversed Crossed By 400 KV T-Line Routes.....	64
Figure 5-3	Landslides Susceptibility Within T-Lines Survey Corridors.....	65
Figure 5-4	Seismic Maps of Romania In Terms of Acceleration and Control Period	66
Figure 5-5	Map of hydrographic basins of Romania.....	67
Figure 5-6	Flood limits with an average overrun of 100 years with climate changes.....	69

Figure 5-7	Groundwater Bodies, Siret River Basin.....	70
Figure 5-8	Groundwater Bodies, Prut-Bârlad River Basin.....	71
Figure 5-9	Natura 2000 Sites And T-Lines Baseline Survey Corridors.....	72
Figure 5-10	IBA Sites Nearby the Project Area	75
Figure 5-11	Ramsar Sites in Romania	76
Figure 5-12	Forest Distribution Based on Species and Groups of Species	77
Figure 5-13	Seismic Maps of Republic of Moldova	82
Figure 5-14	River Basins Districts and River Basin Within The T-Line Baseline Survey Corridors	83
Figure 5-15	Main Groundwater Resources in the Baseline Survey Corridors of the Project	86
Figure 5-16	National Ecological Network.....	88
Figure 5-17	Map Of Natural Areas Protected by the State In The Districts Crossed by the Baseline Survey Corridors of the 400 kV T-Line Routes	90
Figure 5-18	The T-Line Routes - Baseline Survey Corridors and Emerald Network	91
Figure 5-19	IBA Sites Nearby the Project Area	92
Figure 5-20	Ramsar Sites In MD.....	92
Figure 5-21	Bird Migration Routes in the Republic of Moldova	94
Figure 5-22	Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Administrative Map	96
Figure 5-23	Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Onsite Scoping Mission.....	97
Figure 5-24	Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes.....	98
Figure 5-25	T-Line Route - Alternate 1 - Most Problematic Proximities or Crossing- Over.....	107
Figure 5-26	Resident Population By Gender (TH inh.); Population Dependency Rate (%).....	111
Figure 6-1	400 kV OHL Strășeni - Gutinaș, Alternate Route 1 (Blue)	123
Figure 6-2	400 kV OHL Strășeni – Gutinaș Alternate Route 2 (Magenta)	124
Figure 6-3	400 kV Strășeni - Gutinaș, Alternate Underground Route 1	126
Figure 6-4	400 kV Strășeni – Gutinaș Alternate Underground Route 2.....	127
Figure 8-1	SEP Programme	154
Figure 8-2	Grievance Procedure.....	155

Acronyms and Abbreviations

CDR	Compulsory Displacement and Resettlement
CLO	Community Liaison Officer
DOS	U.S. Department of State
EC	European Commission
ENSTO-E	European Network of Transmission System Operators
EMF	Electromagnetic Fields
ES	Electrical Substation
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
EU	European Union
FS	Feasibility Study
GHG	Greenhouse Gas
HG	Government Decision
IBAs	Important Bird Areas
IFC	International Financing Corporation
kV	Kilo Volt
LACF	Land Acquisition and Compensation Framework
MGRES	Moldovan Thermal Power Plant (located in the Transnistrian region)
MD	Republic of Moldova
NGO	Non-Governmental Organisation
OHS	Occupational Health and Safety
OECD	Organisation for Economic Co-operation and Development
OM	Ministerial Order
OPGW	Optical Ground Wire
OUG	Emergency Government Ordinance
RO	Romania
SAC	Special Area of Conservation
SCI	Site of Community Importance
SEP	Stakeholder Engagement Plan

SPA	Special Protection Area
T-Line	Overhead Transmission Line
UG	Underground
UNDP	United Nations Development Program
UNFCCC	United Nations Convention on Climate Change
USAID	US Agency for International Development

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1.0 Executive Summary

The present Environmental and Social Impact Assessment (ESIA) Scoping Report has been prepared for the Strășeni (Republic of Moldova) – Gutinaș (Romania) 400 kV Transmission Line Project, developed under the IDEA (Investments in Developing Energy Assets) program.

Project Overview

The Project aims to develop a new 400 kV overhead transmission line (OHL or T-Line) interconnecting the electrical systems of Romania and the Republic of Moldova, alongside:

- the expansion of Strășeni Substation (MD), requiring acquisition of adjacent land;
- the upgrade of Gutinaș Substation (RO) within the existing footprint.

The Project represents the third strategic interconnection between the two countries, contributing to:

- increased energy security and system reliability in the Republic of Moldova;
- improved integration with the European energy network (ENTSO-E);
- diversification of energy supply sources.

Four alternative routes (203–238 km) were initially assessed, with the scoping phase focusing on two shortlisted alternatives (Alternate 1 and 2).

Purpose of the ESIA Scoping

The main objective of this Scoping Report is to define the scope, methodology, and key issues to be addressed in the full ESIA. Specifically, the report:

- identifies the applicable legal and policy framework (Romania, Moldova, EU and international standards);
- describes the Project components and alternatives;
- establishes the environmental and socio-economic baseline conditions within defined survey corridors (buffer zone on both sides of the T-Line central axis, along the analyzed routes);
- identifies key environmental and social risks and sensitivities;
- outlines the stakeholder engagement process and disclosure requirements;
- proposes the structure and timetable for the full ESIA.

Legal and Institutional Framework

The Project is subject to:

- national EIA legislation in both Romania (Law no. 292/2018) and Moldova (Law no. 86/2014);
- EU directives and standards (EIA Directive, Habitats Directive, Birds Directive);
- international conventions (Espoo, Aarhus, United Nations Convention on Climate Change (UNFCCC), Ramsar, Bern, Bonn);
- IFI requirements and international best practices International best practices, as required by the U.S. Department of State (DOS).

Given its scale (≥ 220 kV and >15 km), the Project mandatorily requires a full ESIA, including transboundary considerations.

Environmental and Socio-Economic Baseline

The baseline analysis covers both countries along defined survey corridors and includes:

- physical environment: air quality, soils, water resources, climate changes, natural hazards;
- biological environment: natural protected areas (Natura 2000, Emerald network, IBAs sites), forest fund;
- socio-economic conditions: demographics, land use, infrastructure, cultural heritage.

The Project crosses:

- multiple administrative regions (counties/raions);
- agricultural and forest lands;
- existing infrastructure networks (roads, railways, pipelines, power lines);
- areas with sensitive receptors, including settlements and heritage sites.

Alternatives Analysis

A Multi-Criteria Analysis (MCA) was performed to evaluate four initial route options based on environmental, social, and technical criteria.

As a result:

- Routes 1 and 2 (initial) were excluded;

- Routes 3 and 4 were refined into Alternate 1 and Alternate 2 for further analysis.

Preliminary findings indicate that:

- both alternatives are feasible, with comparable impacts;
- Alternate 1 is generally preferred, with localized constraints near specific settlements and infrastructure.

Preliminary Impact Assessment

The preliminary impact assessment was conducted for two shortlisted T-Line routes: Alternate Route 1 (former Route 3) and Alternate Route 2 (former Route 4), as the other two were unsuitable for further analysis.

The scoping-level assessment identified potential impacts across key domains:

Environmental:

- soil disturbance (excavation works, increased vulnerability to erosion and landslides, improper management of construction materials and handling of hazardous substances);
- impacts on surface water bodies (excavation works, accidental leaks of dangerous substances);
- biodiversity disturbance, including protected areas and bird migration routes;
- landscape and visual impacts;
- noise and air emissions (pollutant emissions during construction and Corona effect during operation).

Socio-economic:

- proximity to settlements and potential community disturbance;
- land acquisition and compensation requirements;
- impacts on agricultural land use;
- occupational health and safety risks;
- cultural heritage constraints.

Sensitive areas have been identified, particularly where the T-Line is in close proximity (<100 m) to settlements or valuable land uses.

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

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Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

Stakeholder Engagement

Stakeholder engagement is a core component of the ESIA process. The Scoping Report:

- identifies key stakeholders (authorities, local communities, NGOs, landowners, institutions);
- outlines information disclosure mechanisms;
- proposes a structured Stakeholder Engagement Plan (SEP);
- includes a grievance mechanism accessible to all stakeholders.

Initial engagement activities have already been conducted (2024), with further consultations planned during the full ESIA phase (2025–2027).

Summary of Key Findings and Next Steps

The Project is of strategic importance for regional energy integration and security. The scoping process confirms:

- the feasibility of the Project from an environmental and social perspective, subject to mitigation measures;
- the need for continued stakeholder engagement and detailed assessment in the next ESIA phase;
- the importance of selecting an optimal route balancing technical, environmental, and social considerations.

The outcomes of this Scoping Report will guide the preparation of the Full ESIA establishing the structure of the Report, defining future activities to be developed (e.g. detailed field surveys including biodiversity observations in the Project area) and outlining expanded stakeholder consultations and public disclosure processes.

The Full ESIA will further refine these findings and support informed decision-making for Project implementation.

2.0 Introduction

Through its regional Investments in Developing Energy Assets (IDEA) project, the U.S. Department of State (DOS) Bureau of European and Eurasian Affairs seeks to strengthen regional energy supply security, reliability, and efficiency by advancing private sector led investments across all segments of the energy sector and by developing investment ready, bankable projects that attract private capital. The IDEA project was initially funded by the U.S. Agency for International Development (USAID) from September 2022 through February 2025, after which DOS assumed responsibility for its implementation. Black & Veatch Special Projects Corp. (BV) serves as the prime contractor for the IDEA project. Compania de Consultanță în Energie și Mediu S.A. / Energy and Environment Consultancy Company (CEEM) serves as IDEA's regional subcontractor, supporting the preparation of the Environmental and Social Impact Assessment (ESIA) for the Strășeni–Gutinaș 400 kV Transmission Line.

2.1 General Information

The general objective of the Project “România - Moldova interconnector Strășeni - Gutinaș 400 kV Transmission Line” is to identify a technically and environmentally feasible route, develop a preliminary Environmental and Social Impact Assessment (ESIA) scoping and prepare a preliminary design for the transmission line.

The Project represents the third power interconnection between Romania (RO) and Moldova (MD), in addition to the scheduled transmission interconnections (the 400 kV OHL Vulcănești-Chișinău scheduled to be commissioned in early 2026 and the 400 kV OHL Bălți-Suceava scheduled to be commissioned by 2028).

This third power interconnection between RO and MD will provide enhanced energy security to MD, considering the reliability of the MGRES power plant and the gas supply situation in MD.

The overall Project will consist of a new 400 kV transmission line (T- Line) between the Strășeni (MD) and the Gutinaș (RO) electrical substations (ES) and the necessary ES upgrading or expansion works at both stations to connect the new T-Line.

For the 400 kV Strășeni - Gutinaș T-Line route, four route options were preliminary assessed, with a length ranging from 203 to 238 km: Route 1 (Red): 203 km; Route 2 (Orange): 206 km; Route 3 (Blue): 210 km; Route 4 (Magenta): 238 km.



Figure 2-1 400 kV OHL Strășeni – Gutinaș Route Options

Source: Draft Strășeni – Gutinaș 400 kV transmission line Feasibility Study, Black & Veatch

The 330/110 kV Strășeni ES, additional land must be purchased for the expansion.

The connection point in 400/220/110 kV Gutinaș ES, the location of the upgrading works will be inside the precinct of the existing ES with exits as underground connection lines (UG).

2.2 ESIA Scoping Report – Objectives and Structures

The ESIA Scoping Report was developed based on technical data presented in the Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, prepared by Black & Veatch. The Project, originally (2022-2024) developed under the United States Agency for International Development (USAID) - Investment in Developing Energy Assets (IDEA) program, was later (2025) transferred for financial support to the United States Department of State (DOS).

The present ESIA Scoping Report provides information on critical issues and identifies the goals of the future environmental and social impact assessment associated with the Project.

The main objectives of the ESIA Scoping Report are as follows:

- To identify the legal framework applicable to the Project;
- To provide the Project description;

- To assess the main alternatives considered and reasons for selecting a preferred one;
- To establish the corridor for the environmental and socio-economic impact assessment along the OHL routes;
- To identify the current relevant issues regarding the environment (biodiversity, historical monuments, material values, industrial facilities, etc.) and social and economic aspects;
- To identify the land status and development plans, as well as residential zones in the Project area or its vicinity;
- To assess RO and MD regulations regarding compensation in case of expropriation/ resettlement;
- To identify the stakeholders: governmental authorities involved in authorization procedure, NGOs, landowners/ users, local population, public, etc.;
- To plan a dissemination program of the information related to the Project;
- To identify the major environmental and socio-economic concerns of the stakeholders associated with Project development;
- To organize a scoping stakeholders' consultation meeting and to ensure their feedback;
- To deliver the initial Report - Stakeholder Engagement Plan, which should be updated periodically during the Project development;
- To determine the proper methodology to evaluate the Project impacts on the environmental and social aspects, including occupational health and safety;
- To develop a plan on the key aspects to be developed further as part of the main ESIA Report.

The Scoping Report includes the description of the main features of the Project and alternatives considered, the environmental and socio-economic baseline and the preliminary environmental and socio-economic impact assessment.

For the preliminary environmental and socio-economic impact assessment, a study corridor was established along the T-Line routes, hereinafter referred to as the survey corridor.

The preliminary impact assessment was focused on two T-Line routes – Route 3 Blue (redesigned as Alternate 1) and Route 4 Magenta (redesigned as Alternate 2). The other T-Line routes (Route 1 Red and Route 2 Orange) were not suitable for further development.

3.0 Legal and Policy Framework

3.1 Romania Legal and Policy Framework

The central administration in Romania (RO) and the competent environmental authorities, since EU accession in 2007 until today, have nearly completed the entire European process of aligning with the EU acquis and transposing environmental and related legislation (cultural heritage; occupational health and safety; public information and consultation), appropriately reflecting EU's environmental requirements. Romania's progress in this regard can thus be demonstrated by analysing the Annual Plans for the Transposition of EU Directives, published annually in the Official Journal of the EU¹. However, the implementation of these plans and the achievement of the assumed targets remain a challenge, mainly due to the lack of planning and coordination among the responsible authorities and adequate funding.

The following chapter, presenting RO environmental national legislation, relevant for the implementation of this Project, effectively reviews the legal and policy framework, in the field, at the European level as well.

3.1.1 Environmental and Related Fields Legal Requirements

The legal framework for environmental protection at national level is established by the *GEO no. 195/2005 on environmental protection*, with subsequent amendments and completions, representing the basis for adoption of subsequent legislation in the field of environmental protection and defining the obligation and responsibility of the central and local public administration authorities, as well as of all natural and legal persons.

For obtaining the Environmental Agreement, this T-Line Project shall observe the following applicable national legislation in force, in the fields of environmental protection, OHS and public information:

EIA Law

The RO legal framework for assessment of the effects of certain public and private projects on the environment is assured by the *Law no. 292/2018*, transposing the provision of the *Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (EIA Directive)*.

¹ Harmonizing the National Legislation with European Union Law - EU Directives Transposition Plan 2024, Ministry of Foreign Affairs of Romania, 2024 <https://www.mae.ro/node/27929#null>

The Law no. 292/2018 (*EIA Law*) establishes the EIAs principle, defines the scope of the EIA, the competent authorities' attributions, and the procedure for obtaining the Environmental Agreement for planned activities. The Law, as EIA Directive, requires an EIA for Annex 1 projects and screening for Annex 2 projects for deciding the need of EIA.

The Project, included in Annex 1, item 20. *Construction of overhead electrical power lines with a voltage of 220 kV and at least 15 km long* is mandatory subject to an environmental impact assessment

The national EIA procedure integrates, as applicable, the adequate assessment of natural protected areas of community interest, conservation of natural habitats, wild flora and fauna, assessment of the likely effects of industrial emissions and assessment of major accident hazards involving dangerous substances. For projects built on waters or which have connection with waters, according to the provisions of the Waters Law no. 107/1996, with subsequent amendments and completions, the EIA procedure is carried out in coordination with the procedure for issuing the water management permit which includes the assessment of impact on water bodies.

Any project likely to have significant effects on a Natura 2000 site is subject to an adequate assessment of its effects on the site against its conservation objectives. Depending on the conclusions of the assessment, the competent Environmental Protection Agency approves the project only if it does not have negative effects on the integrity of the site in question and after consulting public opinion, case by case. If, despite a negative assessment and in the absence of alternative solutions, a project shall still be carried out for crucial reasons of major public interest, the developer shall take all necessary compensatory measures to guarantee the overall coherence of the Natura 2000 network.

The national EIA legislation is additionally ensured by the *Order no 269/2020 on the approval of the general guide applicable to the stages of the environmental impact assessment procedure*, providing details related to the EIA stages to be completed for obtaining the Environmental Agreement, detailing the main stages of EIA procedure for obtaining the Environmental Agreement (Screening stage, Scoping stage, Analysis stage of the quality of EIA report).

Air Quality

The maintaining or improvement of ambient air quality at the national level for protection of the human health and environment as a whole is assured by the *Law no. 104/2011 on ambient air quality*, transposing the provision of the *Directive 2008/50/EC on ambient air quality and cleaner air for Europe* and the *Directive 2004/1007/EC on arsenium, cadmium, mercury, nickel, polycyclic aromatic hydrocarbons in ambient air*.

Water Law

The water protection in RO is assured by the Law no. 107/1996, with subsequent amendments and completions, establishing the general framework for the protection of water resources (all surface waters consisting of watercourses with their deltas, lakes, ponds, inland marine waters and the territorial sea, as well as groundwaters). The Law, transposing the provision of the *Directive 2000/60/EC establishing a framework for Community action in the field of water policy* and the *Directive 2007/60/EC on the assessment and management of flood risk*, establishes the obligation to develop director plans for water development and management of river basins, comprising two components (Law no. 107/1996, art. 43):

- River Basin Management Plan, developed by Basin Water Administrations (Someș-Tisa; Crișuri; Mures; Banat; Jiu; Olt; Argeș-Vedea; Buzău-Ialomița; Siret: Prut-Bârlad; Dobrogea-Seaside), aiming to achieve and maintain good water status; identify significant anthropogenic pressures and impacts of human activities on surface water status; reduce negative effects and reducing pollution sources; determine the quality requirements on water resources,
- River Basin Planning Plan, aiming to: achieve and maintain the balance between the water requirements of uses and the availability of water at source; diminish the negative effects of natural phenomena on human life, property and activities (floods, excess moisture, drought, soil erosion); use of water potential (hydromechanical and hydroelectric energy production, navigation, extraction of building materials, aquaculture, etc.); determine the environmental requirements on water resources.

In terms of management of flood risks, the potential flood risk assessment shall be developed for each river basin - 11 River Basin Administrations and the Danube River (Law no. 107/1996, art. 76). Currently, the flood hazard and risk maps were updated, in line with the second cycle of the Floods Directive.

The pollution of water resources is forbidden and the wastewater discharged into aquatic environment shall not exceed the maximum limit for the quality indicators, as established by the *GD no. 188/2002 for approving some norms concerning the condition of discharging the wastewater into aquatic environment*:

- *NTPA-001/2002 Normative concerning pollutant loading limits for industrial and municipal wastewater at discharging in natural receivers,*
- *NTPA 002 Normative regarding conditions of wastewater discharging in municipal sewer.*

Protected Natural Areas, Conservation of Natural Habitats, Wild Flora and Fauna

The GEO no. 57/2007 regarding the regime of natural protected areas, conservation of natural habitats, flora and fauna, with subsequent amendments and completions, transposes the provision of the Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitat Directive) and the Directive 2009/147/EC on the conservation of wild birds (Birds Directive).

The GEO establishes the categories of protected natural areas: a) of national interest: scientific reservations, national parks, nature monuments, nature reserves, natural parks; b) of international interest: natural sites of universal natural heritage, geoparks, wetlands of international importance, biosphere reserves; c) of community interest or “Natura 2000” sites: Sites of Community Importance (SCI), Special Conservation Areas (SAC), avifauna Special Protection Areas (SPA); d) of county or local interest (on the public or private domain of the administrative-territorial units).

According with GEO (art 28, para. 2), any plan or project not directly related or not necessary for the management of the protected natural area of community interest that could significantly affect the area, alone or in combination with other plans or projects, is subject an Adequate Assessment of the potential effects on the protected natural area of community interest, considering its conservation objectives. The adequate assessment of the potential effects on the protected natural area of community interest is an integral part of EIA procedure.

If the Adequate Assessment reveals significant negative effects on the protected natural area and in absence of alternative solutions, the plan or project is imperative to be developed due to imperative considerations of major public interest, including social or economic, the environmental competent authority is issuing the Environmental Agreement or Natura 2000 Permit, only after the compensatory measures are being proposed in order to protect the Natura 2000 network (GEO no. 57/2007, art. 28. para. 7).

In the situation of Natura 2000 sites, identified according to the legislation in force, housing a priority natural habitat type and/or a priority species, the only considerations which may be raised for issuing the Environmental Agreement are the ones related to: a) public health or safety; b) beneficial consequences of primary importance for the environment; c) other imperative reasons of overriding public interest on which it has been obtained the opinion of the European Commission (GEO no. 57/2007, art. 28. para. 9).

In line with GEO requirements, the legal regime of protected natural areas has been established by:

- *Law no. 5/2000 regarding the approval of the National Territorial Development Plan – Section III – Protected areas*, with subsequent amendments and completions, which includes protected natural areas of national interest and monuments of nature,
- *Order no. 1964/2007 on the establishment sites of community Importance as an integrant part of the European Ecological Network Natura 2000 in Romania (SCI)*, with subsequent amendments and completions,
- *GD 1284/2007 on establishing the special protected areas of avifauna as part of ecological European Natura 2000 network from Romania (SPA)*, with subsequent amendments and completions.

For natural protected areas, in line with GEO 57/2007 requirements (art. 21), the management plans shall be established by its administrators in order to establish site-specific conservation objectives and conservation measures.

Forest Code

The Forest Code, integrated part of Law no. 331/2024, with subsequent amendments and completions, establishes the following provisions relevant for the proposed investment:

- the permanent withdrawal from the national forests fund is allowed only for special facilities, including objectives/works declared to be of public utility, of national/ county/ local interest (art. 40, para. 1(a)); the permanent withdrawal from the national forest fund of the public property lands shall be carried out without compensation in form of other lands and without the payment of the fee for the permanent removal of lands or of the other financial obligations (art. 40, para. 2);
- the temporary occupation of land from the national forest fund is allowed for objectives/works declared to be of public utility, of national/ county/ local interest (art. 38, para. 1), with advance payment of the monetary obligations (art.38, para.2); for objects of national/county/local interest, the temporary occupation of land from the national forest fund is allowed during the entire period of execution and operation under special condition (the execution and operation period exceeds 10 years; the rendering of lands in the forestry circuit cannot be done without restrictions; the objective lifetime is stipulated in the concession agreement/permit) (art. 38, para. 4).

Waste framework

The waste management shall be carried out according to the provisions of the *GEO no. 92/2021 concerning waste regime*, with subsequent amendments and completions. All waste will be selectively collected and temporarily stored, in compliance with the legal provisions on waste management (*GD no. 856/2002 concerning the evidence of the waste management and approval*

of the list with type of waste, inclusive hazardous, modified and completed by GD no. 210/2007). The GEO no. 92/2021 transposes the *Directive 2008/98/EC on waste*, as amended.

Cultural Heritage

- *GEO no. 43/2000 regarding the protection of the archaeological heritage and the declaration of some archaeological sites as areas of national interest*, with subsequent amendments and completions, establishing the National Archaeological Repertory as the main instrument to locate and assess as precisely as possible the known archaeological heritage and to assess the areas where the heritage is threatened by risk factors and to identify new archaeological sites; in case investments developed nearby areas with archaeological heritage, the preventive archaeological research is mandatory as part of issuing the Environmental Agreement, as a only way to identify, describe and evaluate the direct and indirect effects of projects on the archaeological heritage,
- *Law no. 422/2001 on the protection of historical monuments*, dividing the historical monuments in four categories according to their particular nature: archaeological monuments; architectural monuments; public forum monuments; memorial and funeral monuments,
- *Order no. 2314/2004 for approval the List of historical monuments and the List of disappeared historical monuments*, with subsequent amendments and completions.

Noise Level

- *Standard no. 10009/1989 – Urban Acoustic*, establishing the maximum noise level at the site boundary – 65 dB(A),
- *Order of the Ministry of Health no. 119/2014 for the approval of hygiene and public health norms regarding the living environment of the population*, regulating the noise in residential areas by establishing limit values for the equivalent continuous A-weighted sound pressure level outside of the house, at 1.5 m above the ground (during the day: 55 dB and Cz 50 noise curve; during the night, between hours 23.00 and 7.00: 45 dB, respectively Cz 40 noise curve) and inside rooms, with closed windows (during the day: 35 dB and Cz 30 noise curve; during the night, between hours 23.00 and 7.00: 30 dB, respectively Cz 25 noise curve).

Occupational Health and Safety

- *Law no. 319/2006 on safety and health of workers at work, transposing the provision of the Directive 89/391/EEC and General labour protection rules*, approved by GD no. 1425/2006,

- *GD no. 1876/2005 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from vibration*, transposing the provision of the Directive 2002/44/EC,
- *GD no. 300/2006 on the minimum safety and health requirements for temporary or mobile construction sites*, with subsequent amendments and completions, transposing the provision of the Directive 92/57/EEC,
- *GD no. 493/2006 on the minimum safety and health requirements regarding the exposure of workers to the risks generated by noise*, transposing the provision of the Directive 2003/10/EC,
- *GD no. 1091/2006 concerning the minimum safety and health requirements for the workplace*, transposing the provision of the Directive 1989/654/EEC,
- *GD no. 1146/2006 regarding the establishing the minimum safety and health requirements for the use of work equipment by workers at work*, transposing the provision of the Directive 89/655/EEC,
- *GD no. 520/2016 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from electromagnetic fields*, transposing the provision of the Directive 2013/35/EU,
- *Law no. 307/2006 on fire protection, as amended.*

Romania was a founding member of the ILO (International Labour Organization) in 1919. After Romania's accession to the EU in 2007, the ILO provided technical comments on the 2010-2011 labour and social dialogue legislation and supported the establishment of the Office for Mediation of Collective Labour Disputes.

Stakeholders' Information and Engagement

The Constitution of Romania explicitly stipulates the right of individuals to have access to any information of public interest and the obligation of public authorities to ensure the correct information of citizens regarding matters of public and personal interest. In addition, the legal framework concerning stakeholders' information and engagement includes:

- *Law no. 544/2011 on Free Access to Information of Public Interest*, with subsequent amendments and completions, defines and details the steps for the free access of individuals to any information of public interest. As a general principle, it constitutes one of the fundamental principles of the relationship between citizens and public authorities, in accordance with the Constitution of Romania and international commitments ratified by the Romanian Parliament. It specifies that public authorities or institutions must ensure access to

information of public interest independently or upon request, through the public relations department or a designated person for this purpose.

- *Law no. 86/2000 for the Ratification of the Convention on Access to Information, Public Engagement in Decision-Making, and Access to Justice in Environmental Matters*, with subsequent amendments and completions, signed in Aarhus on June 25, 1998 (the **Aarhus Convention**).
- *GD no. 878/2005 on the Access Right to Environmental Information*, with subsequent amendments and completions, defines the transposition of Directive 2003/4/EC (on public access to environmental information and repealing Directive 90/313/EEC). It ensures the access right to environmental information held by or for public authorities and establishes the conditions, general terms, and methods of exercising this right.
- In accordance with *Law no. 292/2018 on Environmental Impact Assessment of Certain Public and Private Projects (EIA Law)*, Article 2, paragraph 5, letter (g), the interested public (stakeholders) is defined as the public affected or potentially affected by the environmental decision-making process, according to Article 4, or the public that has an interest in that process.

The same Law no. 292/2018 also establishes the method related to stakeholders' information and engagement in the EIA procedure, if applicable, this Project being included in Annex 1, point 20: "Construction of overhead transmission lines with a voltage of at least 220 kV and a length of at least 15 km."

- *Law no. 363/2018 on Individuals' Protection Regarding the Processing of Personal Data by Competent Authorities* for the purpose of preventing, detecting, investigating, prosecuting, and combating crimes, or executing penalties, educational measures, and safety measures, as well as the Free Movement of Such Data, with subsequent amendments and completions.

3.1.2 Legal Framework for Land Acquisition (Compensation)

The legal basis for expropriation is the Romanian Constitution, which recognises the right to private property, but also provides that this right may be restricted in the public interest, under the conditions of the law and with appropriate compensation. In addition, the legal framework for expropriation includes the following legal requirements:

- *Law no. 18/1991 on land fund*, with subsequent amendments and completions; According to the Law, certain investments objectives, including T-Lines, can be located on Class III, IV, and V agricultural land in extravital areas;

- *Law No. 33/1994 regarding the expropriation for reasons of public utility*, with subsequent amendments and completions, establishing the types of the works that can be declared as public utility, by the Government for works of national interest and by the county councils and the General Council of the Municipality of Bucharest for works of local interest;
- *Law no. 255/2010 regarding the expropriation for reasons of public utility, necessary to achieve objectives of national, county, local interest*, with subsequent amendments and completions, establishing the types of project subject to expropriation procedures; the roles and responsibilities of the public institutions on a national, sectoral, county and local administrative basis; compensation procedures; the formal process of informing and consulting with affected parties; a description of how the property rights are transferred; and outlines the right of appeal of affected parties.

In line with Law provisions, the works of national interest for the realization, development of the production, transport and distribution of electricity are declared as public utility (art. 2, para. (1), item d)).

For T-line, in order to ensure normal operation conditions and to prevent accidents, dedicated lands shall be allocated for the protection and safety corridor. In case of T-line > 1kV, the protection and safety corridor shall be calculated in line with the *Order 106/2023 amending Technical Norm regarding the delimitation of the protection and safety areas related to the energy capacities*, approved by the *Order no. 239/2019*.

3.2 Moldova Legal and Policy Framework

On June 25, 2024, the European Union officially opened accession negotiations with the Republic of Moldova (MD), a decision made just over two years after granting it EU candidate status. The efforts of the governmental authorities in Chişinău to harmonize legislation are taking place in an economic, social, and security context deeply aggravated by Russian aggression against Ukraine. However, this does not hinder the positive progress of the Republic of Moldova in the European integration process, which is largely due to the political will demonstrated by the pro-European government and its ability to generate tangible and sustainable results.

3.2.1 Environmental and Related Fields Legal Requirements

The legal requirements relevant for implementing a T-Line project are the following:

Law on Environmental Impact Assessment (EIA)

The MD's legal framework for assessment of the effects of certain public and private projects on the environment is assured by Law no. 86/2014 on Environmental Impact Assessment, with subsequent amendments and completions, which partially transpose the provision of EU Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Directives (Directive 2011/92/EU and Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora – art. 6, items 3 and 4).

Law no. 86/2014 (EIA Law), with subsequent amendments, establishes the EIAs principle, defines the scope of the EIA, the competent authorities' attributions and the procedure for obtaining the Environmental Agreement (EA) for planned activities. The EIA procedure integrates, as applicable, the biodiversity assessment in case of the impact of planned activity on the Emerald sites designated by *Law no. 94/2007 regarding the ecological network* and compliance with the provisions of *Law no. 108/2020 on the control of the major accidents' hazards involving dangerous substances* and *Water Law no. 272/2011*.

The Law, as EIA Directive, requires an EIA for Annex 1 projects and screening for Annex 2 projects in order to decide the need of EIA.

The main stages for obtaining the EA are the following:

- The developer, in line with art. 7 of EIA Law, submits to the environmental competent authority an 'Request for issuing the Environmental Agreement', in compliance with Annex 3 of EIA Law;
- The environmental competent authority, following the preliminary assessment, decides the need of preparation of EIA program (for planned activities listed in Annex 1) or the need to perform an environmental impact assessment or the issuance of Environmental Agreement (for activities listed in Annex 2); also, in the reasoned decision on the preliminary assessment, the environmental competent authority establishes if the planned activity is going to be subject to EIA in transboundary context (in accordance with art. 11-15) or requires the biodiversity assessment (in accordance with art. 10⁸, para. 2), item a);
- The EIA Program, part of decision on the preliminary assessment issued by environmental competent authority in order to establish the level of information to be included in the EIA report, shall include: justified and feasible alternative options considered for planned activity; environmental impact for different environmental factors to be described in the EIA Report; EIA scope and assessment methods; required qualification for the experts involved in the preparation of the EIA Report; prevention measures that should be taken into consideration; baseline studies required to characterize the current status of the environment;
- The EIA Report shall identify, describe and assess, the likely significant environmental impact on: population and human health; biodiversity, paying special attention to protected species and habitats under *Law no. 439/1995 on animal kingdom*, *Law no. 239/2007 on vegetable kingdom*, *Law no. 94/2007 on Ecological Network*, and international conventions ratified by MD; land, soil, water, air, and climate; material goods, cultural heritage, and landscape; the EIA Report shall follow the content presented at art. 10² of EIA Law;

- The public concerned shall be informed about the planned activity by environmental competent authority and planned activity developer, by proper means (post on official webpage, announcement in local/national newspaper, public debate meeting, other public places); the environmental competent authority shall publish the minutes of the public debate meeting on its official webpage, sending a copy of it to the Technical Commission;
- The environmental competent authority, after receiving the written opinion related the EIA Report quality issued by Technical Commission and considering written comments of central and local authorities, other institution, public concerned and the results of biodiversity assessment and public consultation in the transboundary context, shall approve one of the following decisions:
 - To issue the Environmental Agreement.
 - To decline the issue of the Environmental Agreement.

The Environmental Agreement is valid for 4 years.

The Project shall be subject to EIA procedure - the proposed activity is included in Annex 1 of Law no. 86/2014, item 21 “Lines of transportation of electrical power with a voltage of 220 kV and more and a minimum length of 15 km”.

The EIA procedure shall be carried out in accordance with the provisions of Law no. 86/2014 on Environmental Impact Assessment, with subsequent amendments and completions and Order no. 150/2024 for the approval of the Guide regarding the environmental impact assessment procedures, issued by the Ministry of Environment, MD.

The EIA documentation will include the comments issued during the public consultation process.

Law on Environmental Protection

Law no. 1515/1993 on environmental protection, with subsequent amendments and completions, defines the main principles for environmental protection: respecting the environmental legislation as well as legislation related to the use of natural resources and energy consumption, pollution prevention and prevention of damages on biosphere and human health. In particular, the following articles shall be considered for the Project:

- The land withdrawal from agriculture use is allowed for economic objectives, subject to the Government approval (art. 36);
- The forests withdrawal from forest fund is allowed for special facilities, including T-Lines, subject to the Government decision and positive permit of the Governmental Ecological Expertise; the losses caused by withdrawal from forest fund shall be compensated with equivalent land reforestation in terms of surface and quality of wooden material (art. 41);

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

- The conservation of biodiversity is required through natural protected areas (art. 63).

Air Quality

The monitoring of the air quality at the national level for protection of the human health and environment is assured by the *Law no. 98/2022 on ambient air quality*, with subsequent amendments. The law partially transposes the provision of the *Directive 2008/50/EC on ambient air quality and cleaner air for Europe* and the *Directive 2004/1007/EC on arsenium, cadmium, mercury, nickel, polycyclic aromatic hydrocarbons in ambient air*.

Water Law

Law no. 272/2011, with subsequent amendments and completions, establishes the legal framework for the management, protection and efficient use of surface water and groundwater, based on assessment, planning and decision process and the mechanisms for protection, prevention of water pollution and restoring the aquatic habitat considering the EU requirements. The law partially transposes the provision of EU Directives.

The discharge of wastewater in surface water or groundwater is forbidden, without proper wastewater management, established by the environmental permit (art. 34).

The provisions of GD no. 949/2013 which approves the Regulation on the sanitary protection areas of water inlets (chapters V and VI) as well as the provisions of Law no. 352/2023 for the modification of Law no. 440/1995 regarding the protection corridor and strips of the river's waters and water basins shall be considered in establishing the final towers OHL location.

Law on Natural Areas Protected by The State

Law no. 1538/1998, with subsequent amendments and completions, establishes the legal framework for setting up and operation of natural areas protected by the State, principles, conservation mechanisms as well as the attributions of central and local authorities, nongovernmental organizations and public.

Planned activities that may have a significant impact on state-protected natural areas, Emerald sites, or on the species and natural habitats within them, shall be carried out in compliance with the provisions of Law no. 86/2014 on Environmental Impact Assessment (art. 9).

For reduction of anthropogenic impact on objects and complexes situated in protected areas, specific widths of the protection corridors are established by urban and landscaping planning documentation, approved by the Government.

The specific protection corridors for objects and complexes situated in the protected area shall be as follows (art. 83, para. 2):

- Scientific reservation, national park, biosphere reservation: 100÷150 m;
- Natural protected area:
 - Geological and paleontological, hydrological, zoological, botanical, and mixed: 500÷1000 m;
 - Protected secular trees and rare plant species: 30÷50 m;
- Natural reservation, landscape reservation, resources reservation, area with multioperation management: 700÷1000 m;
- Dendrological garden, landscape architecture monument and zoological gardens: 100÷150m;
- Wetland of international importance: 1000 ÷ 1500 m.

Inside the protection corridors, the implementation of normal economic activities which don't affect the natural processes is allowed (art. 85), while the clearcutting of forests is forbidden, among other restrictions (art. 86).

National Ecological Network

The Law no. 94/2007, with subsequent amendments, establishes the legal framework for setting up and development of national ecological network, as part of pan European ecological network and local ecological network.

Within the national ecological network, which includes all-natural ecosystems physically and functionally connected to establish an ecological balance, the natural protected areas of international, national, and local importance, their buffer zones, ecological corridors and ecological reconstruction areas are included.

Law Related to The Republic of Moldova Red Book

Law no. 325/2005, with subsequent amendments and completions, establishes the legal framework for protection, use and restoring the species of plants and animals included in the Republic of Moldova Red Book, and the specific attribution of the public authorities and scientific institutions. The Red Book represents an official document including the list of plants and animals extinct, critically endangered, endangered, vulnerable, rare and indeterminate in MD and general information related to their status, condition, distribution and protection and conservation methods. The law stipulates the obligation to assure an appropriate protection of the species listed in the Red Book (art. 9).

The third edition of the Republic of Moldova Red Book (2015) includes 218 species of plants and 216 species of animals and new sections with rare species of fungi and algae.

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

Law on Fauna

Law no. 439/1995, with subsequent amendments, regulates relations in the field of protection and use of wild animals (mammals, birds, reptiles, amphibians, fish, insects, crustaceans, molluscs, etc.) that permanently or temporarily populate the territory of MD and impose measures to avoid the negative impact on the fauna and migration routes (articles 11, 12 and 14).

Law on Flora

Law no. 239/2007, with subsequent amendments, establishes the legal framework in the field of conservation, protection, restoration, and use of the flora as well as the competences of the public authorities of all levels and of the scientific institutions in the field and ensures the protection of the plants in order to avoid the negative impact of the economic activities; planned activities subject to EIA procedure in line with Law no. 86/2014 shall respect the mitigation measures imposed by the Environmental Agreement (art. 12, para. 3).

Law on Cultural Heritage Protection

The Law no. 1530/1993, with subsequent amendments and completions, establishes the legal framework for protection of cultural heritage monuments and defines the attributions of competent authorities for administration the national or local registries.

Law on Archaeological Heritage Protection

The Law no. 218/2010, with subsequent amendments and completions, establishes the necessary of preventive archaeological research sustain by the investor (Moldelectrica) in order to protect the sites from damage or destruction during construction works.

The protection corridor for archaeological heritage: 50÷200 m, depending on the objective's type and importance (art. 2, paragraph "s").

Law on Access to Information Of Public Interest

Law no. 148/2023, with subsequent amendments and completions, provides that the information of public interest should be made available free of charge and mandatory to the applicants/petitioners. There is no authority to control / monitor the law enforcement, but there is the possibility to appeal to the People's Advocate.

Law on Transparency in Decision-Making

Law no. 239/2008, with subsequent amendments and completions, establishes the applicable rules for ensuring transparency in the decision-making process within the central and local public administration authorities, other public authorities and regulates their relations with the citizens,

with the associations established in accordance with the law, with other interested parties in order to participate in the decision-making process.

Legal Framework for Occupational Health And Safety

Nine of the EU directives on health and safety at work and five of the EU labour law directives have been or are in the process of being transposed to the MD legal framework.

The Ministry of Labour, Social Policy and Family developed a roadmap that concerns the harmonization of EU legislation with MD legislation in occupational health and safety.

According to sources, there is no effective law enforcement on working condition and labour rights in MD at present.

The following laws and regulations are applicable:

- Law no. 186/2008 on Occupational Health and Safety, with subsequent amendments;
- Labour Code of Republic of Moldova no. 154/2003, with subsequent amendments;
- National Collective Agreement no. 8/2007 on elimination the worst forms of child labour, amended by Collective Agreement no. 14/2013;
- Law no. 278/1999 on how to recalculate the amount of compensation of the damage caused to employees after mutilation or other health injuries during the performance of duties, with subsequent amendments;
- Law no. 289-XV/2004 on invalidity allowances on temporary work incapacity benefits and other social security benefits;
- Law no. 756 /1999 on insurance for work accidents and occupational diseases, with subsequent amendments;
- Law no. 116/2012 on industrial safety of hazardous industrial facilities, with subsequent amendments;
- Law no. 1515/1993 on environmental protection, with subsequent amendments;
- Collective agreement (national level) - Occupational health and safety of employees working under individual employment contracts;
- GD no. 906/2020 for approval of minimum health and safety requirements for the use by workers of personal protective equipment;
- GD no. 1101/2001 for approval the regulation related to the disability allowance for accidents at work or professional diseases, amended by GD no. 898/2020;

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

- GD no. 513/1993 for approval the regulation on the payment to companies, organizations, and institutions of the single allowance for the loss of working capacity or death of the employees following an accident at work or an occupational disease, with subsequent amendments;
- GD no. 357/2018 on the determination of disability, with subsequent amendments;
- GD no. 95/2009 for approval norms related to the implementation of occupational health and safety Law no. 186-XVI/2008, with subsequent amendments;
- GD no. 1487/2004 for approval of the list of standard works and jobs in difficult and very difficult conditions, harmful and particularly harmful for which compensations are established for employees;
- GD no. 168/1993 for approval the regulation on jobs attested for the confirmation of the right of pensions in advantageous conditions;
- GD no. 353/2010 for approval of minimum occupational health and safety requirements at work;
- GD no. 765/2008 on the State Inspectorate for Industrial Facilities Technical Surveillance;
- GD no. 937/2010 amending item 2 of the Regulation on the evaluation of working conditions at work and method of applying works lists by branches.

The Republic of Moldova is part of ILO (International Labour Organization) and has ratified all fundamental conventions as well as all governance conventions. In terms of technical conventions 31 of 178 have been ratified, including the Convention on Safety and Health in Agriculture Convention, 2001 (No. 184) and Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187). The Technical convention on Safety and Health in Construction Convention, 1988 (No. 167) have not been ratified.

3.2.2 Legal Framework for Land Acquisition (Compensation)

In order to ensure integrity, normal operation conditions and prevention of accidents, the provisions of ***GD no. 852/2024 For Approval Of The Regulation On The Protection Of Zones Electrical Networks*** shall be observed. The following main provisions are relevant for the proposed investment:

- For T-Lines construction and operation, the land will be assigned according to the legislation;
- Protection zones (Safety corridors) within certain distances from the outer conductors shall be established; for 400 kV T-Line, the safety corridor is defined as 30 m from outer conductors, resulting a total T-Line safety corridor of 84 m;
- Minimum acceptable distances between T-Lines and buildings, constructions, land and water areas shall be established;
- In the protection zones, along T-Lines crossing forest lands and on lands outside the forest fund, the system operators are obliged to perform deforestation works or vegetation trimming, in order to create and maintain the safety clearance distances.

The land within the T-Line safety corridor, not taken from landowners, will be used for agricultural works and other works, in strict compliance with GD no. 852/2024.

The planned works for repair, technical maintenance and reconstruction of T-Lines crossing agricultural land will be performed with the prior notification of the landowners and, usually, in period when the land is free of crops, or the integrity of agricultural crops is ensured.

Owners of the land crossed by the T-Lines and within the safety corridors shall be compensated for damage to crops resulting from the intervention of the system operator.

The regulatory framework related to change of land use, land sale/purchase and compensation of damages/losses in force in MD is assured by:

Land Use Code no. 22/2024, with subsequent amendments, that includes the following provision related to change of land use, temporary land withdrawal from agricultural use or from the forest fund and compensation for damages/losses:

- The change of land use for high quality agricultural lands, forest fund lands and water fund lands is allowed for placement of linear objectives, including T-Lines (art. 58, para. 6(a) & 61); the procedure and specific requirements for the change of land use as well as the selection criteria shall be established by the Government; The change of land use for agricultural lands and forest fund lands shall only be performed after compensation for the losses caused by their exclusion from the agricultural use or the forest fund (art. 59, para. 9);
- The temporary withdrawal of lands from agricultural use or from the forest fund for electricity transport and distribution networks, shall be approved by local government authorities (lands owned by administrative-territorial units or in private ownership) or by Government decision (state-owned lands) (art. 61, para. 1); The temporary withdrawal of lands from the agricultural circuit or from the forest fund shall not exceed a period of two years from the date of the decision's adoption (art. 61, para. 6);

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

- Damages caused to landowners by the temporary withdrawal of their lands from the agricultural use or from the forest fund, as well as by the limitation of their rights or the degradation of soil quality resulting from the activities of legal or physical persons, shall be fully compensated, including lost profits (art. 62, para. 1).

Law no. 488/1999, with subsequent amendments, *on expropriation* in case of public utility defines the procedure applicable in case of expropriation of land for public utilities projects, namely:

- The public utilities projects must be declared as national or local interest projects (the T-Lines projects are included at art. 5, para. 1, lit. “e”);
- In case of land expropriation for public utilities projects, the landowner is entitled to compensation (art. 9, para. 2);
- If the public administration authority and landowner do not reach an agreement related to the compensation amount, the compensation should be established by the court, based on an expertise conducted by independent experts (art. 15).

Law no. 1308/1997, with subsequent amendments, *on normative price for land and sale/purchase procedure* establishes the following provisions relevant for the proposed investment:

- Losses caused by land withdrawal from agricultural use and from forest fund shall be compensated (art. 12, para. 3); in case of public utility works, declared as such under *Law no. 488/1999 on Expropriation for Public Utility Purposes*, the losses shall not be compensated (art. 12, para. 4(a)); The land can be expropriated at the market prices that are not allowed to be less than the normative price specified in the Annex, at item II (2,260,59 MD for one point-hectare).

Forest Code no. 69/2024, establishes the following provisions relevant for the proposed investment:

- The reduction and fragmentation of the forest fund and of other lands covered by forest vegetation are forbidden; in case of T-Lines investments, the permanent withdrawal from the forest fund and other lands covered by forest vegetation, with or without clear-cutting, is allowed, subject to Government approval (art. 67, para. 1 & 2);
- The permanent withdrawal from the forest fund and other lands covered by forest vegetation shall be compensated with other land areas suitable for afforestation and at least equivalent in size (art. 68, para. 1).

GD no. 553/2024, for the approval of the **Regulation on The Change Of Land Use For High-Quality Agricultural Lands** includes the following provisions:

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

- For special facilities, including energy infrastructure, the change of land use for high-quality agricultural lands is allowed (art. 3, para. 3.5);
- The Government/local administrative authority shall approve a decision related to the change of land use from for high-quality agricultural land within one month after transferring the funds to the state budget, equivalent to the losses caused by the land withdrawal from agricultural use (art. 17).

3.3 International Laws and Agreements (Conventions)

The Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) brings together all stakeholders to prevent environmental damage before it occurs. The Espoo Convention requires that Member States notify and consult each other on all projects that might have an adverse transboundary environmental impact. The current situation regarding the Espoo Convention in MD and RO is the following:

- MD: signed the accession in 4.01.1994,
- RO: ratified on 29.03.2001.

Therefore, the Party of Origin shall notify the Affected Pary, as per the Espoo Convention Procedure, if trans-boundary impacts are expected from the Project implementation or not.

The other main international conventions ratified by MD and RO are the following:

- *Convention on Long-Range Transboundary Air Pollution* (Aarhus, Denmark, 1998); MD ratified the Convention by the Law no. 1018-XV, 25 April 2002 and RO by the Law no. 271/2003,
- *United Nations Convention on Climate Change – UNFCCC* (New York, 1992); MD ratified the Convention by the Parliament Degree no. 404-XIII, 16 March 1995 and RO by the Law no. 24/1994,
- *Convention on the Protection and Use of Transboundary Watercourses and International Lakes* (Helsinki, 1992); MD ratified by Degree no. 1546-XII/1993 and RO by Law no. 30/1995,
- *Vienna Convention for the Protection of the Ozone Layer* (Vienna, 1985) and its Montreal Protocol; MD ratified by the Parliament Degree no. 966-XIII, 24 July 1996 and RO by the Law no. 84/1993,

- *United Nations Convention on Biological Diversity* (Rio de Janeiro, 1992); MD ratified the Convention by the Parliament Degree no. 475-XIII, 16 May 1995 and RO by the Law no. 58/1994,
- *United Nations Convention on Wetlands of International Importance – Ramsar Convention* (Ramsar, Iran, 1971); MD ratified the Convention by the Parliament Degree no. 504-XIV, 14 July 1999 and RO by the Law no. 5/1991,
- *United Nations Convention on the Conservation of Migratory Species of Wild Animals* (Bonn, 23 June 1979); MD ratified the Convention by the Law no. 1244-XIV, 28 September 2000 and RO by the Law no. 13/1998.

The Convention recognizes that the management for efficiency conservation of migratory species also requires cooperation between states and common actions in the national territories regarding both migration routes and also wintering, stopping, feeding, breeding or moulting.

In order to avoid or mitigate the impact of electricity power grids on migratory birds and to curb the increasing electrocution and collision risk from medium & high voltage transmission lines to migratory birds, the following resolution were adopted:

- Resolution 10.11 regarding power lines and migratory birds, adopted at COP10, in 2011,
- Resolution 7.4 regarding electrocution of migratory birds, adopted at COP7 in 2002.

Based on the Bonn Convention (Art. IV), the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA, Hague) was adopted, aiming to coordinate the measures necessary to maintain the migratory water birds in a favourable state of conservation or to restore the favourable state. MD ratified the Convention by the Law no. 1244 - XIV of 28.09.2000 and RO by the Law no. 80/2000.

In order to avoid or mitigate the impact of electricity power grids on migratory birds in the African-Eurasian region, the *Resolution 5.11 Power Lines and Migratory Waterbirds* was adopted at COP5, in 2012.

- *Convention of the Conservation of European Wildlife and Natural Habitats – Bern Convention* (Bern, 1982); MD ratified the Convention on 24.05.1994 – 61 Emerald sites accepted by the Standing Committee of Europe Council (T-PVS/PA (2023) 08) and RO by the Law no. 13/1993,
- *Convention Concerning the Protection of the World Cultural and Natural Heritage – UNESCO World Heritage Convention* (Paris, 1972); MD ratified the Convention by the Law no. 1113-XV, 06 June 2000 and RO by the Law no. 178/1990,

- *European Convention on the Protection of the Archaeological Heritage (Revised)* – *Valetta Convention* (Valetta, 1992); MD ratified the Convention by the Law no. 1256-XV, 19 July 2002 and RO by the Law no. 150/1997,
- *European Convention on Landscape* (Florence, 2000); MD ratified the Convention by the Law Parliament, 14 March 2002 and RO by the Law no. 451/2002,
- *UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters* – **Aarhus Convention** (Aarhus, Denmark, 1998); MD ratified the Convention by the Parliament Degree no. 346-XIV, 07 April 1999 and RO by the Law no. 86/2000.

3.4 International Best Practices, Standards And Guidelines

EIA – Environmental Impact Assessment

International lenders, require that financed projects should be following relevant local/host country environmental requirements and lenders environmental procedures.

The Project, originally developed under the USAID Investment in Developing Energy Assets (IDEA) program, was later transferred for financial support to the U.S. Department. of State (DOS).

Following the administrative transition from USAID to the U.S. Department of State, all previously established environmental and social safeguards remain applicable. Therefore, the Project will comply with the standards and procedures defined under the ***Code of Federal Regulations, Part 216, Title 22 (22 CFR 216)***² to ensure continuity, accountability, and best international practices.

For funded projects, prior to implementation, potential adverse impacts shall be assessed, via the following documentation:

- *Initial Environmental Examination* (IEE), defined as the first review of the reasonably foreseeable effects of a proposed action on the environment. Its function is to provide a brief statement of the factual basis for a Threshold Decision as to whether an Environmental

2 U.S. Code of Federal Regulations - PART 216—ENVIRONMENTAL PROCEDURES, January 2026
<https://www.ecfr.gov/current/title-22/chapter-II/part-216>

Assessment or an Environmental Impact Statement will be required; an IEE in USAID terminology is similar to a Preliminary Assessment/Screening at the EU level;

- *Environmental Assessment* (EA), defined as a detailed study of the reasonably foreseeable significant effects, both beneficial and adverse, of a proposed action on the environment of a foreign country or countries; an EA in USAID terminology is similar to a detailed EIA study at the EU level;
- *Environmental Impact Statement* (EIS), defined as a detailed study of the reasonably foreseeable environmental impacts, both positive and negative.

In case of specific mitigation & monitoring measures to be implemented during the project lifetime, identified as part of IEE or EA, the USAID environmental procedures require developing an *Environmental Mitigation and Monitoring Plan* (EMMP), setting out indicators/criteria for monitoring the implementation and effectiveness of mitigation measures and establishes timing and responsible parties.

Even if it is not an official USAID regulatory guidance, the **Sector Environmental Guideline for Construction**³ represents one of the key documents supporting the general environmentally and socially sustainable approach during the initial ESIA (scoping stage) / IEE process related to MD-RO T-Line Project.

Any USAID project should mandate compliance with relevant local/host country requirements and USAID environmental requirements. If host country laws are not in place or are not as strong as the requirements set out in USAID regulations, USAID requirements must be implemented, at a minimum, to demonstrate good international industry practice.

SIA – Social Impact Assessment and Stakeholders’ Engagement

International best practices recognize the importance of early engagement with local communities, indigenous peoples, and individuals who may be impacted by the proposed project.

In order to assist decision-makers in preventing or mitigating social potential impacts, USAID has a number of policies, guidelines, and vision statements that address possible issues faced by communities, including: • Land, property and resource rights; • Human rights; • Environment; • Indigenous Peoples’ rights; • Labor; • Health and Safety; • Inclusive Development; and • Gender.

For this type of Project (MD-RO T-Line), the preparation and implementation of an IEE (Initial Environmental Examination) is recommended to be performed together with a stakeholder participation and engagement process, which may help in identifying the reasonably foreseeable

3 Sector Environmental Guideline – Construction, USAID, 2017 <https://usaidgems.org/sectorGuidelines.htm>

environmental and social impacts. USAID, as donor organisation for this Project, promotes and supports public participation on decision-making processes from early planning stage of the activity.

Social impact is considered in USAID programs, helping Implementing Partners/beneficiaries in determining whether a full social impact assessment is necessary to understand potential impacts, manage risks, and plan for the mitigation of adverse impacts.

According to USAID Environmental Procedures, stakeholder engagement is an integral step in ESIA preparation and is included in **Reg. 216**⁴, enhancing the effectiveness and accountability of the process and the project/activity.

This recommended stakeholders' engagement process and SIA are strongly based upon the following USAID policies and framework principles and tools, relevant for this Project:

- Social Impact Assessment Initial Screening Tool, July 2023;
- Voluntary Social Impact Principles Framework, September 2024;
- Optional Social Impact Assessment Framework, May 2022;
- Policy on Promoting the Rights of Indigenous Peoples (PRO-IP) | Strategy and Policy⁵, March 2020.

Additionally, in Sector Environmental Guideline - Construction⁶ - ANNEX 4. Social Safeguards, further guidance is provided to ensure implementation of social safeguards identified in the social impact assessment, covering the following topics:

- Displacement and resettlement
- Sustainable livelihoods
- Community health and safety
- Indigenous peoples
- Cultural heritage

⁴ <https://www.law.cornell.edu/cfr/text/22/part-216>

⁵ PRO-IP, USAID, March 2020 <https://climateandsecurity.org/wp-content/uploads/2024/11/USAID-IndigenousPeoples-Policy-mar-2020.pdf>

⁶ Sector Environmental Guideline – Construction, USAID, 2017 <https://usaidgems.org/sectorGuidelines.htm>

OHS - Occupational Safety and Health Practices

In USAID-funded projects, compliance with host countries OHS requirements is mandatory, in our case – Republic of Moldova and Romania. Additionally, USAID expects its construction projects to attain a level of protection of workers and public health as close to US standards as the local situation will allow, considering site specific conditions.

To achieve appropriate levels of health and safety management during all stages of Project development, mainly construction phase, USAID strongly recommends that contractors (in particular, lead contractors) be evaluated for the role based on their EHS management system (environmental, health and safety) and compliance with applicable host countries EHS requirements.

According to the Sector Environmental Guideline - Construction - ANNEX 3. Minimum Recommended Occupational Safety and Health Practices for Construction and ANNEX 5. Hazardous Materials, a focused attention must be given to the following topics:

- Hazard identification and assessment
- Policies and training
- Site management
- Hygiene and first aid
- Personal protective equipment
- Working at heights
- Working in excavations / trenches
- Hazardous materials

Related to EMR - electromagnetic fields radiation, even if scientific studies have not clearly shown whether exposure to EMF increases cancer risk, EPA – US Environmental Protection Agency makes few recommendations to prevent/avoid possible health risks.

Land Use and Tenure

Land tenure and land use changes are another potential impact screened during the initial ESIA process (scoping stage). USAID analyses and observes host countries' land-tenure structures, and their national expropriation vs. compensation policies and regulations.

According to Sector Environmental Guideline – Construction⁷ it is recommended that a proper understanding of the relationship of the local communities with the land should feed into the analysis of alternatives (in our case T-line proposed routes alternatives) and concept planning. Depriving owners/users of agricultural land may result in significant social impacts if not addressed via compensation measures.

- General principles to be considered are emphasised:
- Recognize and respect all legitimate tenure right holders and their rights;
- Safeguard legitimate land tenure rights against rights and infringements;
- Avoid infringing on the human rights and legitimate tenure rights of others (in particular vulnerable populations, such as women);
- Identify if and when there are indigenous peoples and other communities with customary tenure systems;
- Consider informal tenure to be equivalent to formal tenure.

USAID also has prepared a **Guideline on Compulsory Displacement and Resettlement**⁸ – a voluntary tool including good practices on how to avoid CDR (compulsory displacement and resettlement) or, when unavoidable, how to minimize and mitigate its associated risks.

This Guideline is consistent with USAID’s mission and its vision for ending extreme poverty which recognizes that property rights and secure land tenure are essential for inclusive economic growth.

7 Sector Environmental Guideline – Construction, USAID, 2017 <https://usaidgems.org/sectorGuidelines.htm>

8 Guideline on Compulsory Displacement and Resettlement, USAID, May 2016 <https://tenuresecurity.org/tools-and-mission-resources/tools-and-guides/>

4.0 Project Description

4.1 Project Overview and Analysed Options

The Project will ensure the third power interconnection between MD and RO through a new T-Line between the Strășeni substation (MD) and the Gutinaș substation (RO).

The overall Project will consist of a 400 kV single-circuit T-Line and the substation expansion at Strășeni and upgrading at Gutinaș ES to accommodate the new interconnection.

The Project is currently at the ***Feasibility Study Stage***, aiming to identify a technically and environmentally feasible route between Strășeni and Gutinaș, develop a preliminary Environmental and Social Impact Assessment (ESIA) Scoping Report, and prepare a preliminary design for the 400 kV T-Line.

4.1.1 Strășeni Substation Expansion

At present, the Strășeni Substation is a 330/110 kV ES, and there is no 400 kV connection available. This substation needs to be expanded and new 400 kV equipment installed.

Outside the existing Strășeni Substation fence there is space available for the expansion. The adjacent plot is privately owned, and the required real estate needs to be purchased for the ES expansion.

As no existing layout drawings of the site were available, the existing station was remodeled using satellite imagery and site photographs to identify the most suitable area for expansion. Based on feedback from Moldelectrica, the East area of the existing site was identified as the optimal location for the required 400 kV expansion.

Two layout arrangements were evaluated for the Strășeni ES expansion: *Option 1 (East-West bus orientation)* and *Option 2 (North-South bus orientation)*.

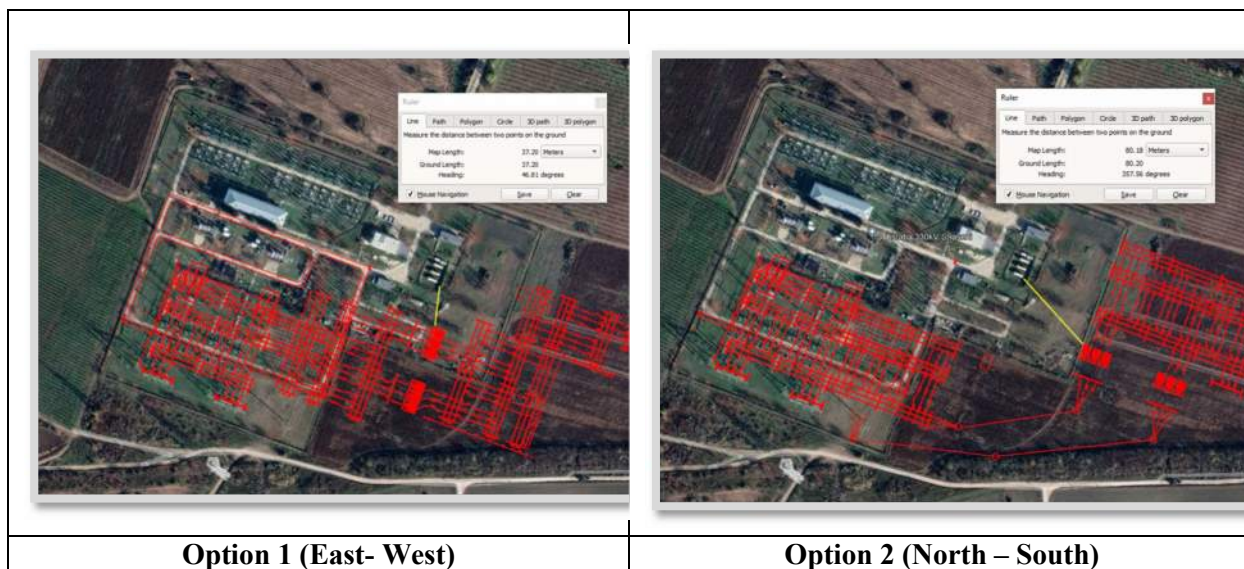


Figure 4-1 Conceptual design of Strășeni ES expansion

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

Even if Option 1 (East-West) presented a smaller footprint, **Option 2 (North-South) is selected as the preferred layout**, as it allows the new autotransformers to be positioned at a greater distance from the existing oil storage tanks.

The 400 kV area required for the expansion (ultimate buildout - Gutinaș and future line connections) is 63,000 m².

Regarding the configuration of the new 400 kV substation, several bus arrangements were evaluated, including Double Bus Double Breaker, Mixed Topology and Breaker-and-a-half. The final Moldelectrica selection for 400 kV expansion design is the breaker and-a-half-design, with a few slight modifications.

The new 400 kV substation will be connected to the existing 330 kV substation with 2 nos. of 630 MVA auto-transformers. The transformer ratings and design would be identical to the transformers installed at the Chișinău 400 kV substation. The new Strășeni substation will also have the provision for installing shunt reactors for voltage control and sufficient capacity for future 400 kV transmission line connections.

4.1.2 Gutinaș Substation Upgrade

The existing Gutinaș substation was recently constructed in support of the 400 kV Smârdan line project. This newly built 400 kV ES has space available for upgrades, by adding a single breaker position to support an additional 400 kV line connection as required for the T-line to Strășeni. Likewise, the relay and control enclosure have space available for upgrades, by adding the

needed relay and control devices for the breaker expansion. Figure shows the existing 400/220/110 Gutinaș substation, and the grey space in the middle is the 400 kV substation area.



Figure 4-2 400/220/110 kV Gutinaș Substation

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

Gutinaș substation is one of the major substations in RO and has several high voltage T-lines connected to it. There is not much space surrounding the substation for any new overhead T-lines coming in, and hence any new T-line coming in will have to enter the substation via underground cables. To this aim, short underground connections (UG) will be developed from the 400 kV substation to the overhead T-line transition pole.

4.1.3 Transmission Line

The T-Line Strășeni-Gutinaș will be of 400 kV ac and will use steel lattice structures. A right-of-way width of 75 m will be required for the line and this needs to be expropriated by Moldelectrica and Transelectrica.

For the assuring the power interconnection between RO and MD, four T-Line routes were preliminary assessed, identify as Route 1 (Red), Route 2-(Orange), Route 3 (Blue) and Route 4 (Magenta).

Route 1 (Red)

Route 1 extends approximately 203 km, with 146 km in RO and 57 km in MD. Beginning at the existing Gutinaș Substation, the route proceeds eastward, crossing the Trotuș River and Route 112, before turning north and northeast to bypass infrastructure and population centres. The route traverses the Siret River, reservoir, and canal system, ascends terrain north of Valcele and Bacioiu, and continues through mixed agricultural and wooded landscapes.

As Route 1 progresses eastward and north eastward, it crosses numerous regional roads and railways, carefully avoiding intravillage alignments and permanent structures. Approaching the Prut River, the route crosses mountainous terrain and ultimately enters a Natura 2000 protected area at the international border crossing. In MD, the route continues through rural areas, traverses an Emerald protected zone, and navigates highly congested areas near Lozova before terminating at the Strășeni Substation.



Figure 4-3 400 kV OHL Strășeni- Gutinaș, Route 1 (Red)

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

Border Crossing Route 1 (Red)

Route 1 (Red) intersects a designated Natura 2000 protected area. The crossing was evaluated at a feasibility level to identify environmental and regulatory constraints relevant to route selection. The crossing length is approximately 312 m, including approximately 153 m within the Natura 2000 designation. Interaction with protected lands was a key consideration in the comparative evaluation of routes utilizing this crossing.

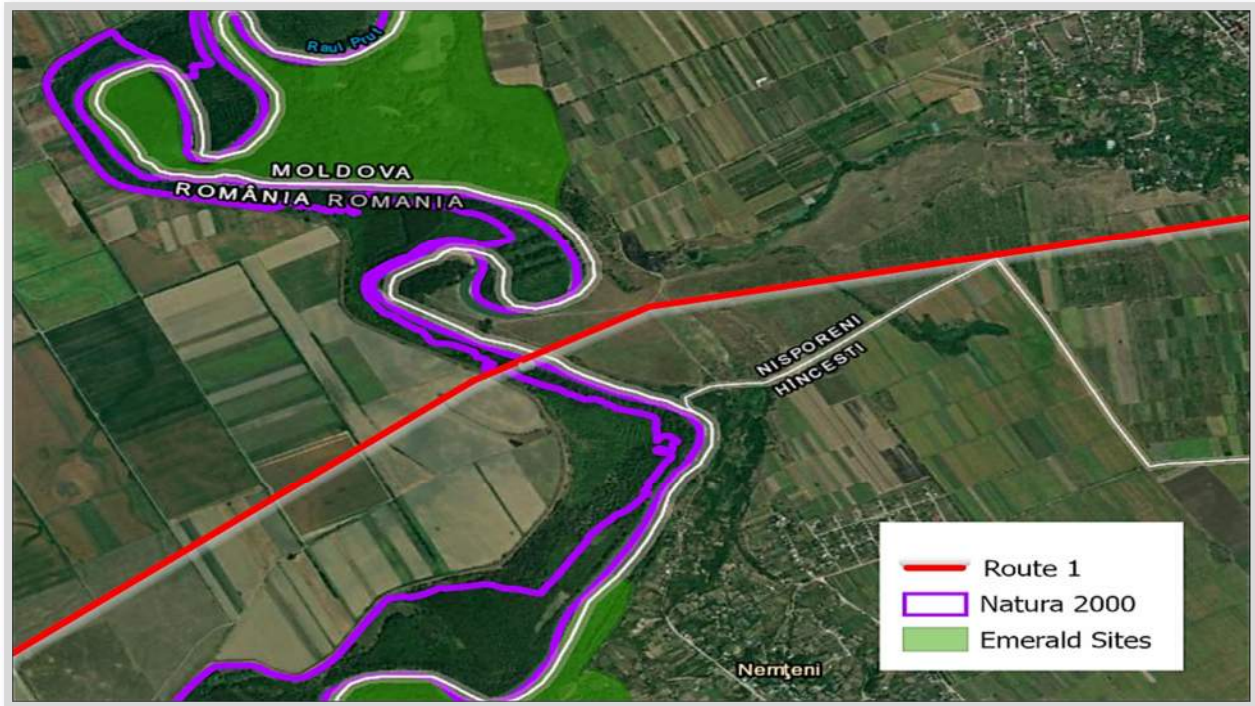


Figure 4-4 Border Crossing Route 1, 400 kV OHL Strășeni- Gutinaș
Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

Route 2 (Orange)

Route 2 extends approximately 206 km, with approximately 134 km in RO and 72 km in MD. Beginning at the existing Gutinas Substation, and initially trends east, crossing the Troțuș River and Route 112, then shifting north briefly before angling northeast to bypass existing infrastructure—this early segment requires notable terrain crossing and tree clearing and passes south of Drăgușani,

Across RO, the route continues east with multiple major transportation and water crossings, including Route 2, a railroad, and the A7, and then traverses the Siret River, Siret Reservoir, and the Siret Canal/Spillway. It generally avoids intravillage encroachment and permanent structures where practicable while navigating alternating agricultural areas, wooded terrain, and varied topography, including additional terrain/clearing needs as it passes near villages such as Valcele, Bacioiu, Gaiceana, and Popești.

Approaching the border, Route 2 diverges west of Tabalaiești to reach the Prut River crossing south of Baile Drănceni. This specific crossing location is identified in the study as the only Prut River crossing area between RO and MD that is free of Natura 2000 restrictions.

Within MD, Route 2 continues through mixed agricultural, wooded, and developed landscapes, generally avoiding major population centers and Emerald protected sites where feasible, while

paralleling existing road and rail corridors in places. The route encounters congested infrastructure corridors—notably near Cristesti and around Lozova—where routing flexibility is constrained and ongoing/new development increases difficulty, though the study notes that no permanent structures were affected at the time of assessment. Route 2 ultimately follows major corridors before terminating at the Straseneni sub-expansion site.



Figure 4-5 400 kV OHL Străşeni – Gutinaş Route 2 (Orange)

Source: Draft Străşeni – Gutinaş 400 kV Transmission Line Feasibility Study, Black & Veatch

Route 3 (Blue)

Route 3 extends approximately 210 km, with approximately 144 km in RO and 66 km in MD. Beginning at the existing Gutinaş Substation and is routed to connect the project endpoints while managing a complex mix of transportation crossings, terrain, environmental constraints, and nearby population centres.

In RO, Route 3 follows an alignment that frequently parallels existing transmission lines, roadways, and rail corridors. The route crosses multiple transportation features and river systems, including the Trotuş River and the Siret River and spillway, and traverses a range of land uses such as mixed-use farmland, wooded areas, and ridge terrain. A notable segment includes passage through the Pădurea Mesteacănului forest, where terrain and vegetation represent key feasibility considerations. Throughout this portion, the alignment was developed to maintain separation from villages and permanent structures while accommodating terrain and infrastructure constraints.

As Route 3 approaches the international border, it passes through increasingly congested areas characterized by dense infrastructure and settlement patterns. The route crosses the Prut River just south of Baile Drănceni at a location identified during this study as not intersecting Natura 2000–designated areas.

Within MD, Route 3 generally parallels existing transportation corridors, including the M1 and E581, while traversing mixed agricultural and developed areas. The alignment includes a segment that passes through an Emerald protected area for a limited distance before continuing through highly constrained and congested areas near Cristesti, Lozova, and Strășeni. Based on conditions observed at the time of this study, no permanent structures are directly affected. The route terminates at the Strășeni substation expansion site.



Figure 4-6 400 kV OHL Strășeni – Gutinaș Route 3 (Blue)

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

Border Crossing Route 3 (Blue)

Route 3 (Blue) avoids designated Natura 2000 protected areas and represents the only evaluated crossing location along the border without identified protected-area interaction. The total crossing length is approximately 233 m, including approximately 75 m across the river. The reduced environmental constraint at this location supported its consideration in the advancement of preferred routes.

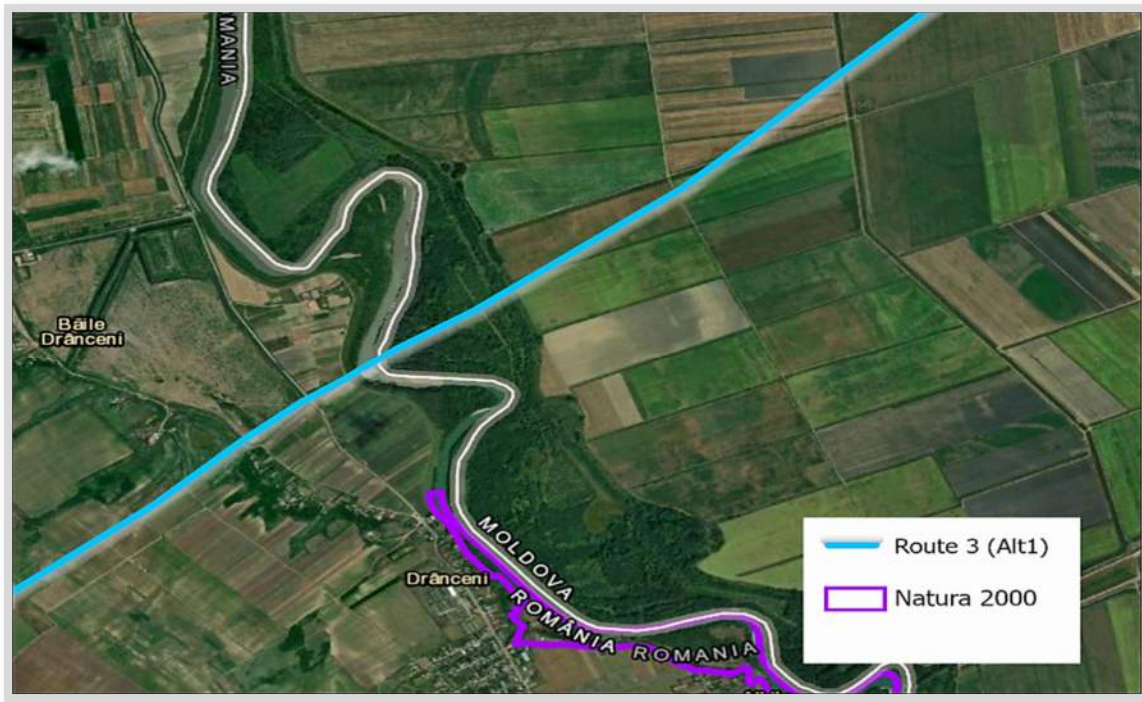


Figure 4-7 Border Crossing Route 3, 400 kV OHL Strășeni- Gutinaș

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

Route 4 (Magenta)

Route 4 extends approximately 238 km, with approximately 130 km in RO and 108 km in MD, and represents the longest alignment evaluated.

In RO, Route 4 follows an alignment similar to other alternatives in its initial segments, frequently paralleling existing transmission lines, roadways, and rail corridors. The route crosses multiple transportation features and river systems, including the Trotuș River and the Siret River and spillway, and traverses agricultural areas, wooded terrain, and valley crossings. A notable segment includes passage near and through the Pădurea Mesteacănului forest, where terrain and vegetation were identified as feasibility considerations. Throughout this portion, the alignment was developed to maintain separation from villages and permanent structures where practicable.

Approaching the international border, Route 4 turns west and crosses the Prut River at a location that intersects a Natura 2000–designated area on the Romanian side of the border. This border crossing location was evaluated as part of the overall feasibility assessment of international crossings and represents a key environmental consideration associated with the route.

Within MD, Route 4 traverses mixed-use agricultural land, forested areas, and increasingly developed regions while avoiding population centers to the extent practicable. The alignment includes numerous roadway and railroad crossings and several directional adjustments to

accommodate existing settlements, reservoirs, and infrastructure. As the route approaches the Străşeni area, development density increases, and the alignment navigates congested conditions before terminating at the Străşeni substation expansion site. Based on conditions observed at the time of this study, no permanent structures are directly affected.



Figure 4-8 400 kV OHL Străşeni – Gutinaş Route 4 (Magenta)

Source: Draft Străşeni – Gutinaş 400 kV Transmission Line Feasibility Study, Black & Veatch

Border Crossing Route 4 (Magenta)

Route 4 (Magenta) intersects a Natura 2000 protected area. The crossing length is approximately 260 meters, with an estimated 690 meters of route interaction within the designated protected area. This level of environmental interaction was identified as a constraint during feasibility evaluation and contributed to increased regulatory uncertainty for routes dependent on this crossing.

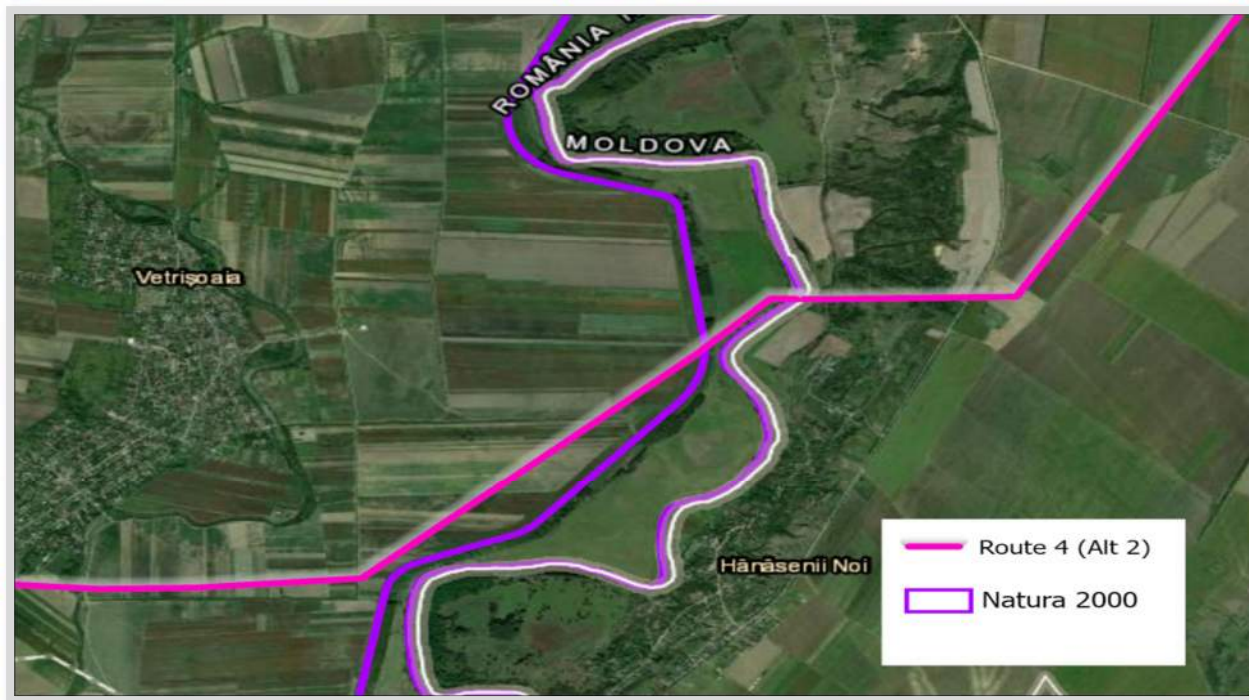


Figure 4-9 Border Crossing Route 4, 400 kV OHL Strășeni- Gutinaș
Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

4.2 Preliminary Multi Criteria Analysis for T-Line routes (Routes 1-4)

Each 400 kV T-Line route shares certain common segments but diverges to address specific constraints.

- **Route 1 (Red)**

Route 1 provides a continuous alignment that avoids permanent structures and minimizes intrusion into populated areas while carefully navigating diverse land uses, protected zones, and major natural and built features across RO and MD. However, despite these routing efforts, multiple sections present substantial challenges—including difficult terrain, extensive required clearing operations, and unavoidable encroachment into sensitive environmental areas such as Natura 2000 and Emerald protected zones.

Due to the cumulative impact of these terrain difficulties and environmental constraints, *Route 1 is ultimately considered infeasible for development as proposed.*

- **Route 2 (Orange)**

Route 2 offers a continuous alignment that avoids permanent structures, limits intravillage involvement, and navigates a complex landscape of farmland, wooded areas, transportation corridors, and environmental constraints across both RO and MD. While the route benefits from a viable Prut River crossing location—one of the few points free of Natura 2000 restrictions, it still encounters several significant challenges, including extensive terrain variability, multiple constrained corridors near dense population centres, and proximity to Emerald protected areas. These factors collectively introduce considerable construction, environmental, and permitting risks. As a result, despite careful routing to minimize impacts, *Route 2 is ultimately determined to be infeasible due to cumulative terrain difficulties and unavoidable environmental encroachments.*

- **Route 3 (Blue)**

Route 3 was evaluated at a feasibility level and represents a continuous alignment between the project endpoints under the conditions reviewed in this study. The route accommodates numerous transportation crossings, terrain transitions, and environmentally sensitive areas while generally avoiding direct impacts to villages and permanent structures.

Several segments of Route 3 pass through constrained environments, including forested terrain, protected areas, ridge crossings, and densely developed corridors. These conditions introduce considerations related to constructability, permitting, and future land-use compatibility that would require further evaluation in subsequent project phases. The international border crossing location and sections near Straseni were identified as particularly constrained based on existing development patterns.

Overall, *Route 3 provides a feasible routing option* based on available information and observed conditions at the time of evaluation. Additional refinement, detailed design, and coordination with relevant stakeholders would be required during later project stages to address site-specific constraints and evolving land-use conditions.

- **Route 4 (Magenta)**

Route 4 was evaluated at a feasibility level and provides a continuous alignment between the project endpoints under the conditions reviewed in this study. The route accommodates a wide range of environmental, terrain, and infrastructure constraints while generally avoiding direct impacts to villages and permanent structures.

The extended length of Route 4, its passage through forested and mixed-use terrain, and the international border crossing within a designated Natura 2000 area represent notable considerations identified during the feasibility evaluation. Additional segments near developed areas in Moldova also present conditions that may influence constructability, permitting, and future alignment flexibility.

Overall, *Route 4* represents a feasible routing alternative based on available information and observed conditions at the time of evaluation. Further refinement, detailed design, permitting, and coordination with regulatory agencies and local stakeholders would be required during subsequent project phases to address site-specific constraints and evolving land-use conditions.

For selection of the optimum 400 kV OHL route option, the multi-criteria analyses were conducted, based on technical, infrastructure, and environmental/cultural factors as follows:

- *Technical factors*: Route length; Elevation over 350 m; Erosion Risk; Soil Type; Seismic Risk (acceleration);
- *Infrastructure Factors*: Co-location with existing roads and infrastructure corridors; Utility Congestion; Road Crossings;
- *Environmental/ Cultural Factors*: Land Use; Parks/Greenspaces; Sensitive Receptors (schools, hospitals, and faith-based or community facilities); Historic District/Cultural Sites; Natural Resources.

Each route was scored according to the system presented in **Table 4-1**. For each criterion:

- Quantitative metrics were multiplied by their corresponding sub-criterion value;
- The resulting products were summed across all sub-criteria within that criterion;
- This sum was then multiplied by the criterion's assigned weight to calculate the weighted score for that criterion.

The total route score was calculated by summing the weighted scores across all criteria.

In this scoring system, lower total scores indicate more favourable routes. A lower score reflects fewer impacts, conflicts, or constraints, and therefore a more desirable routing option.

Table 4-1 Routing Criteria, Sub-criteria, Assigned Values, and Weights

Categories (Bolded Categories Present in Project)	Criteria Weights/ Sub-Criteria Values
Environmental Category: Weighted Value 34%	
Land Use (Kilometers)	14%
Crop Land	3
Barren	0
Vineyards	10
Orchards	3
Deciduous/ Conifer /Evergreen Forest	5
Grassland/Pasture	1

Wetlands	7
Intravillage	10
Extravillage	0
Land Ownership Potential Conflicts (Count)	5%
Airport	5
Superfund site	7
Heritage Cultural /Archaeological Site	1
Human Settlements	0
Natural Resources	15%
Ponds (Kilometers)	4
Intermittent Stream/River (kilometers)	2
Visual Impact	8
Lake (Kilometers/meters)	6
Levee (Count)	5
Protected Area/Natura 2000 (km)	7
Fire Hazard Severity Zone (kilometers)	4
Floodplain 100yr (kilometers)	6
Infrastructure Category: Weighted Value 23%	
Corridor Collocation	3%
Greenfield/Open Space (kilometers)	4
Powerline (kilometers)	4
Road (Kilometers)	4
Overall Corridor Collocation (3%)	2
Structures & Other Sites	10%
Airport (kilometers)	10
Hazardous Waste Site (Count)	10
Misc Crossings	10%
Existing Pipeline (Count)	2
Railroad & Light rail Crossings - Avoid (Count)	7
Primary Roads and Secondary Roads- Low Avoidance (Count) (Included mining village roads)	1
All other roads- Low Avoidance (Count)	1
Powerlines (Count)	4
Technical Category: Weighted Value 33%	
Length (Kilometers)	2
No. of Angles > 5° and < 30° (Count)	0
No. of Angles ≥ 30° and ≤ 75° (Count)	0

No. of Angles > 75° (Count)	0
Percent Grade (0-20%) (kilometers)	1
Percent Grade (20-30%) (kilometers)	7
Percent Grade (>30%) (kilometers)	10
Elevation over 350 Meters (kilometers)	4
Geologic Units (Count)	0
Karst Topography (kilometers)	6
Erosion Risk (High) (Count)	7
Soil type (Count)	5
Seismic Risk (acceleration)	1
Acquisition Category: Weighted Value 10%	
Expropriation	2

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

The four identified routes represent a range of trade-offs between length, environmental impact, terrain complexity, and constructability.

The results of initial screening of the OHL routes are presented in the following table.

Table 4-2 Initial Screening of Four Routes Score Results

	ROUTES			
	Route 1	Route 2	Route 3	Route 4
Route Length (km)	203 km	206 km	210 km	238 km
Composite Score	290.86	293.93	279.85	324.50
Numerical Ranking	2	3	1	4
Environmental Factors	54.12	55.59	48.11	70.35
Infrastructure Factors	3	2.76	2.34	2.67
Technical Factors	179.17	181.55	164.29	183.96
Acquisition Factors	54.57	54.03	65.10	67.52

Source: Draft Strășeni – Gutinaș 400 kV transmission line Feasibility Study, Black & Veatch

Route 3 (Blue) achieved the lowest composite score (279.85) and ranked first overall. In this scoring framework, lower composite scores indicate more favourable routing options due to reduced impacts and constraints.

5.0 Environmental and Socio-Economic Baseline

In order to assess the current environmental and socio-economic baseline for preliminary assessment of considered option for Project location (400 kV T-Line Strășeni/MD - Gutinaș/RO), buffer zones were established: environmental baseline survey corridor (1000 m each side from the central axis of the T-Line, along analysed routes); socio-economic baseline survey corridor (500 m each side from the central axis of the T-Line, along analysed routes).

For the biodiversity baseline, an extended survey corridor was established to ensure that all protected areas and critical habitats within the Project's wider area of influence are identified (5 km buffer zone on both sides of the T-Line central axis, along the analysed routes). The following main data sources were consulted for preliminary assessment of considered option, based on desk study & literature review of available baseline data from published sources:

Romania

- National Inventory Document, Romania's Greenhouse Gas Inventory 1989-2023, <https://unfccc.int/documents/646456>;
- Romania Annual Environmental Report, 2024, National Agency for Environment and Protected Areas, <https://anmap.gov.ro/wp-content/uploads/2025/10/Raport-anual-privind-Starea-Mediului-in-Romania-pe-anul-2024-1.pdf>;
- Annual Environmental Bacău County Report, Bacău County Environmental Directorate, 2024, <https://djmbc.anmap.gov.ro/19-2-raport-anual-de-mediu-2/>;
- Annual Environmental Vaslui County Report, Vaslui County Environmental Directorate, 2024, <https://djmvvs.anmap.gov.ro/raport-anual-privind-starea-mediului-in-judetul-vaslui/>;
- Annual Environmental Iași County Report, Iași County Environmental Directorate, 2024, <https://djmis.anmap.gov.ro/rapoarte-anuale-2000-2022/>;
- Air quality website – monitoring stations included in the National Network for Monitoring Air Quality, https://www.calitateaer.ro/public/home-page/?__locale=ro;
- European Soil Data Center (ESDAC), Soil Erosion Database, Joint Research Centre, European Commission, <https://esdac.jrc.ec.europa.eu/>;
- European Landslide Susceptibility Map (ELSUS v2), European Soil Data Centre (ESDAC), Joint Research Centre (JRC);

- Updated Siret River Basin Management Plan 2022-2027, Siret River Basin Administration, <https://rowater.ro/activitatea-institutiei/departamente/managementul-european-integrat-resurse-de-apa/planurile-de-management-ale-bazinelor-hidrografice/>;
- Updated Prut-Bârlad River Basin Management Plan 2022-2027, Prut-Bârlad River Basin Administration, <https://rowater.ro/activitatea-institutiei/departamente/managementul-european-integrat-resurse-de-apa/planurile-de-management-ale-bazinelor-hidrografice/>;
- Flood Risk Maps (2nd Cycle), <https://harticiclu2.inundatii.ro/>;
- Natura 2000 Viewer website, EEA, https://natura2000.eea.europa.eu/?page=Page-1&views=Countries_View;
- Birdlife International website, Data zone – Romania, <https://datazone.birdlife.org/country/romania>;
- National Institute of Statistics, including Statistical Yearbooks, <https://insse.ro/cms/en>;
- Official Census, <https://www.recensamantromania.ro/>;
- Cartographic Server for the National Cultural Heritage, <https://map.cimec.ro/Mapserver/>;
- Historical monuments List 2015, <https://patrimoniul.ro/ro/articles/lista-monumentelor-istorice>;

Moldova:

- Monitoring Program on the territory Republic of Moldova, 2024, <https://am.gov.md/sites/default/files/document/attachments/Program%20de%20monitorizare%20a%20LRM%2C%202024.pdf>;
- Natural Resources and the Environment in the Republic of Moldova Statistical Publication, 2025 Edition, https://statistica.gov.md/en/natural-resources-and-environment-in-republic-of-moldova-editions-2010-2025-9688_59475.html;
- Annual Report regarding the quality of environmental components monitored by the Environmental Reference Laboratory, 2021, <https://am.gov.md/ro/content/rapoarte-anuale-privind-starea-mediului>;
- Republic of Moldova's first Biennial Transparency Report, 31 December 2024, <https://unfccc.int/sites/default/files/resource/BTR1-EN-270125.pdf>;
- Fifth National Communication of the Republic of Moldova, 2023, <https://unfccc.int/documents/627100>;

- Statistical Yearbook of the Republic of Moldova, edition 2025, National Bureau of Statistics of Republic of Moldova, https://statistica.gov.md/en/buletin-statistic-trimestrial-editiile-2005-2021-9877_59482.html;
- 2023 IPM Annuary – “Protection of the environment in the Republic of Moldova”, https://ipm.gov.md/upfiles/menu_files/ANUARUL%202024.pdf <https://ipm.gov.md>;
- Natural Resources and Environment, 2023, National Bureau of Statistics of Republic of Moldova, https://statistica.gov.md/files/files/publicatii_electronice/Mediu/Resursele_naturale_editia_2023.pdf;
- MD Environmental Agency website, Protected areas, <https://am.gov.md/ro/content/d1-arii-protejate>;
- National Ecological Network maps, Biotica Ecological Society & IUCN, <https://www.bioticamoldova.org/storage/files/14H%C4%83r%C8%9Bile%20Re%C8%9Bei%20Ecologice%20Na%C8%9Bionale%20R.%20Moldova.pdf>;
- Cadastre of Protected Natural Areas, Institute of Ecology and Geography, <https://ieg.md/cadastrul-ariilor-protejate>;
- Emerald Network Reference Portal, <https://rm.coe.int/draft-list-of-adopted-emerald-network-sites/1680ad54a1>;
- BirdLife International website, Data zone - Moldova, <https://datazone.birdlife.org/country/moldova/ibas>;
- Forest resources, Moldsilva, <https://moldsilva.gov.md/pageview.php?l=ro&idc=180&t=/Fondul-forestier-national/Resursele-forestiere>;
- National Institute of Statistics, including Statistical Yearbooks, <https://statistica.gov.md/en>;
- National Geospatial Data Fund, <https://geoportal.md/ro>;
- Ministry of Culture, <https://mc.gov.md/ro/content/monumente-de-public>;

Other international data sources screened:

- Ramsar Sites Information Service, <https://rsis.ramsar.org/>;
- DataBank, The World Bank Group, <https://databank.worldbank.org/home.aspx>;

In addition, the digital maps available in both countries were accessed, meetings were organised, and scoping field missions were performed for discussion with relevant authorities and onsite research for preliminary assessment of environmental and social issues to be further considered in this Report and during future Project development stages.

Table 5-1 Stakeholders Engagement Activities

No.	Activities During the Scoping Stage of the Project	Stakeholders	Data
1	Kick-off meeting, Chişinău Municipality, MD	Internal (project promoters-TSOs, consultants, donor) External (MD governmental officials and regulators)	10-14 June 2024
2	Onsite scoping mission, RO and MD	Internal (project promoters-TSOs, consultants, donor) External (representative of Environmental Authorities)	23-27 September 2024
3	Progress meeting, Bucharest, RO	Internal (project promoters-TSOs, consultants, donor) External (RO governmental officials, agencies and regulators)	13-14 November 2024
4	Internal progress review and financial support transfer from USAID to DOS	Internal (project promoters-TSOs, consultants, donor)	3 December 2025

5.1 Environmental Baseline in Romania

5.1.1 Air Quality

The RO air quality monitoring network (RNMCA) comprises 148 automatic air quality monitoring stations and 11 mobile stations (30 traffic-type stations; 58 industrial-type stations; 37 urban background-type stations; 13 suburban background-type stations; 7 regional fund-type stations; 3 EMEP-type stations)⁹.

Considering the environmental baseline survey corridor, the closest air quality monitoring stations are located in Oneşti, Vaslui, Huşi and Iaşi municipalities.

⁹ https://www.calitateaer.ro/public/description-page/stations-page/?__locale=ro

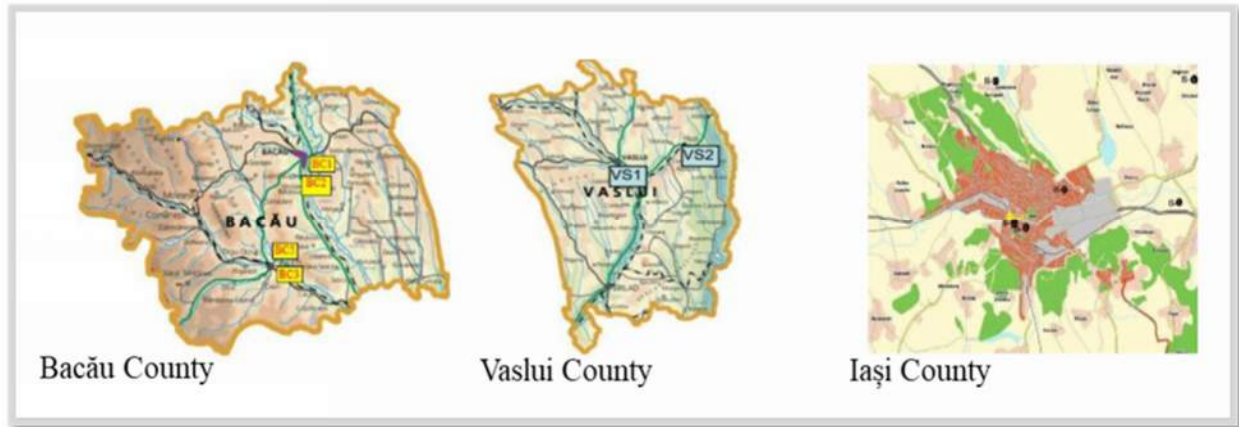


Figure 5-1 Air Quality Monitoring Stations in Bacău, Vaslui and Iași Counties

Source: Annual Environmental Counties Reports

In the counties crossed by the analysed T-line routes, the monitoring of air quality is assured by the national network, through the following automatic monitoring stations:

- Bacău county: 5 automatic monitoring stations (• urban type: BC1, BC5; • industrial type: BC2, BC3; • traffic type: BC4) for monitoring sulphur dioxide (SO₂), nitrogen oxide (NO, NO₂, NO_x), carbon monoxide (CO), benzen (C₆H₆), O₃, solid suspensions (PM₁₀, PM_{2.5}); in 2024, due to technical reasons, the data collected for some pollutants did not respect the quality criteria established by the Law no. 104/2011; the concentrations recorded during 2024:
 - NO₂: • BC1: hourly maximum concentration: 81.64 µg/m³; annual average concentration: 40.5 µg/m³; • BC2: • hourly maximum concentration: 94.68 µg/m³; annual average concentration: 16.78 µg/m³; • BC3: hourly maximum concentration: 83.52 µg/m³; annual average concentration: 16.25 µg/m³; • BC4: hourly maximum concentration: 155.54 µg/m³; annual average concentration: 33.58 µg/m³;
 - SO₂: • BC1: hourly maximum concentration: 18.93 µg/m³; daily maximum concentration: 11.28 µg/m³; • annual average concentration: 7.10 µg/m³; • BC2: hourly maximum concentration: 19.01 µg/m³; daily maximum concentration: 9.69 µg/m³; annual average concentration: 5.50 µg/m³; • BC3: hourly maximum concentration: 18.15 µg/m³; daily maximum concentration: 6.45 µg/m³; annual average concentration: 8.74 µg/m³;
 - CO: • BC1: hourly maximum concentration: 1.41 mg/m³; daily maximum concentration: 0.73 mg/m³; annual average concentration: 0.16 mg/m³; • BC2: hourly maximum concentration: 5.55 mg/m³; daily maximum concentration: 2.93 mg/m³; annual average concentration: 0.13 mg/m³; • BC3: hourly maximum concentration: 2.63 mg/m³; daily maximum concentration: 2.01 mg/m³; annual average

- concentration: 0.16 mg/m³; O₃: • BC1: hourly maximum concentration: 103.04 µg/m³; daily maximum concentration: 92.46 µg/m³; annual average concentration: 30.21 µg/m³; • BC2: hourly maximum concentration: 129.42 µg/m³; daily maximum concentration: 122.98 µg/m³; annual average concentration: 49.74 µg/m³; • BC3: hourly maximum concentration: 122.88 µg/m³; daily maximum concentration: 117.51 µg/m³; annual average concentration: 37.88 µg/m³; • BC5: hourly maximum concentration: 145.51 µg/m³; daily maximum concentration: 139.49 µg/m³; annual average concentration: 44.13 µg/m³;
- PM10: • BC1: daily maximum concentration: 66.32 µg/m³; annual average concentration: 23.36 µg/m³; • BC2: daily maximum concentration: 90.86 µg/m³; annual average concentration: 18.27 µg/m³; • BC3: daily maximum concentration: 91.26 µg/m³; annual average concentration: 26.35 µg/m³; • BC4: daily maximum concentration: 94.36 µg/m³; annual average concentration: 27.43 µg/m³; • BC5: daily maximum concentration: 84.89 µg/m³; annual average concentration: 25.40 µg/m³.
 - PM2.5, maximum concentration: • BC1: 43.64 µg/m³; • BC5: 52.90 µg/m³.

The exceedances of limit/target values were recorded in 2024 for: • PM10: BC1: 2 days; BC2: 6 days; BC3: 20 days; BC4: 15 days; BC5: 16 days; • O₃: BC2: 2; BC5: 7; ¹⁰

- Vaslui county: 2 automatic monitoring stations, urban type, in Vaslui city (VS1) and Huşi municipality (VS 2), for monitoring SO₂, NO, NO₂, NO_x, CO, C₆H₆, O₃, PM₁₀, PM_{2.5}; in 2024, due to technical reasons, the data collected for some pollutants did not respect the quality criteria established by the Law no. 104/2011. The latest annual average concentrations recorded by Vaslui monitoring station (VS1): • NO₂: 2021: 17.77 µg/m³; • SO₂: 2022: 4.13 µg/m³; • PM₁₀: 2023: 20.97 µg/m³; • CO: 2021: 0.52mg/m³; • O₃: 2022: 41.36 µg/m³; • C₆H₆: 2021: 1.61 µg/m³.¹¹
- Iaşi county: 6 automatic monitoring stations (2 traffic type: IS-1, IS-M1; 1 urban type: IS-2; 1 industrial type: IS-3; 2 rural type: IS-4, IS-6; 1 suburban: IS-5), for monitoring pollutant emissions; in 2024, due to technical reasons, the data collected for some pollutants did not respect the quality criteria established by the Law no. 104/2011. The annual average concentrations recorded in-2024 at Iaşi monitoring station: • NO₂: IS-1: 28.85 µg/m³; IS-M1: 31.98 µg/m³; IS-2: 15.34 µg/m³; IS-3: 12.07 µg/m³; IS-4: 15.58 µg/m³; IS-5: 17.06

¹⁰ Annual Environmental Bacău County Report, Bacău County Environmental Directorate, 2024, <https://djmbc.anmap.gov.ro/19-2-raport-anual-de-mediu-2/>

¹¹ Annual Environmental Vaslui County Report, Vaslui County Environmental Directorate, 2024, <https://djmvsvs.anmap.gov.ro/raport-anual-privind-starea-mediului-in-judetul-vaslui/>

$\mu\text{g}/\text{m}^3$; IS-6: $9.87 \mu\text{g}/\text{m}^3$; • SO_2 : IS-1: $5.26 \mu\text{g}/\text{m}^3$; IS-M1: $6.80 \mu\text{g}/\text{m}^3$; IS-2: $4.66 \mu\text{g}/\text{m}^3$; IS-3: $4.62 \mu\text{g}/\text{m}^3$; IS-4: $4.23 \mu\text{g}/\text{m}^3$; IS-5: $5.42 \mu\text{g}/\text{m}^3$; IS-6: $4.88 \mu\text{g}/\text{m}^3$; • PM_{10} : IS-1: $32.93 \mu\text{g}/\text{m}^3$; IS-2: $27.53 \mu\text{g}/\text{m}^3$; IS-4: $17.72 \mu\text{g}/\text{m}^3$; IS-5: $26.82 \mu\text{g}/\text{m}^3$; IS-6: $28.60 \mu\text{g}/\text{m}^3$; • $\text{PM}_{2.5}$: IS-2: $15.50 \mu\text{g}/\text{m}^3$; IS-6: $17.15 \mu\text{g}/\text{m}^3$; • CO : IS-1: $0.09 \text{ mg}/\text{m}^3$; IS-M1: $0.46 \text{ mg}/\text{m}^3$; IS-4: $0.04 \text{ mg}/\text{m}^3$; IS-5: $0.16 \text{ mg}/\text{m}^3$; IS-6: $0.75 \text{ mg}/\text{m}^3$.¹²

The exceedances of limit/target values were recorded in 2024 only for PM_{10} .

5.1.2 Climate Changes

Romania is part of the United Nations Framework Convention on Climate Change, included in Annex I (ratified in 1995).

According to the RO annual inventory submissions to the United Nations Framework Convention on Climate Change (April 2025)¹³, in 2023, the greenhouse gas (GHG) emissions (without considering sinks) amounted to 103,862.45kt $\text{CO}_{2\text{eq}}$ (66.45% decrease comparing with 1989 level).

The largest contributor to total GHG emissions is CO_2 , followed by CH_4 and N_2O ; in 2021, the shares of GHG emissions were: 65.34% CO_2 , 23.8% CH_4 , 8.9% N_2O , 0.0008% PFCs.

Overall, in 2023, the energy sector has the highest contribution to national GHG emissions, with a share of 68.58%, followed by agriculture (17.23%), industrial processes and product use (8.11%) and waste (6.08%).

Romania is an extremely vulnerable country to climate change. For the North-East region of the country crossed by the proposed 400 kV T-Line routes (Bacau and Vaslui counties), the following changes in climatic factors were predicted for the 2001-2030 period¹⁴:

the increase of the average monthly air temperature higher in November-December and in the warm period of the year (May-September), by about 1°C ;

the average annual warming, at the level of the whole country, is between 0.7°C and 1.1°C , the highest values being in the mountain area;

12 Annual Environmental Iași County Report, Iași County Environmental Directorate, 2024, <https://djmis.anmap.gov.ro/rapoarte-anuale-2000-2022/>

13 National Inventory Document, Romania's Greenhouse Gas Inventory 1989-2023, <https://unfccc.int/documents/646456>

14 Annual report on the state of the environment in Romania, 2022

decrease of monthly precipitation compared to 1961-1990, especially in the winter months (December, February), an increase in October, and in June a slight increase is projected at mountain stations and decreases at hill and plains stations.

According to the analysis presented in the PDr NE 2021-2027 there was an annual increase in the amplitude for air temperature, in the last 20 years by 2.4 °C in Bacău, 2.5 °C in Iași; the increase of absolute air temperature in all these municipalities is by 2-4 °C.

5.1.3 Soil and Subsoil

The analysed T-Line routes cross the following physical-geographical subregions:

- In Bacău county: Culmea Pietricica, Podișul Bârladului and Colinele Tutovei;
- In Vaslui county: Podișul Bârladului, Colinele Tutovei, Dealul Fălciului and Depresiunea Elanului.

The quality of soils in Romania is strongly influenced by climatic conditions (high temperatures, low rainfall), inadequate agricultural practices (inefficient methods of exploitation of agricultural holdings and application of fertilizers and pesticides) and abusive deforestation. As a result, the soil is affected by erosion, degradation and landslides.

At the level of the territorial-administrative units in Romania crossed by the analysed 400 kV T-Line Strășeni - Gutinaș routes (Route 1, 2, 3 and 4), the susceptibility to erosion of the crossed soils is shown in the following figure:

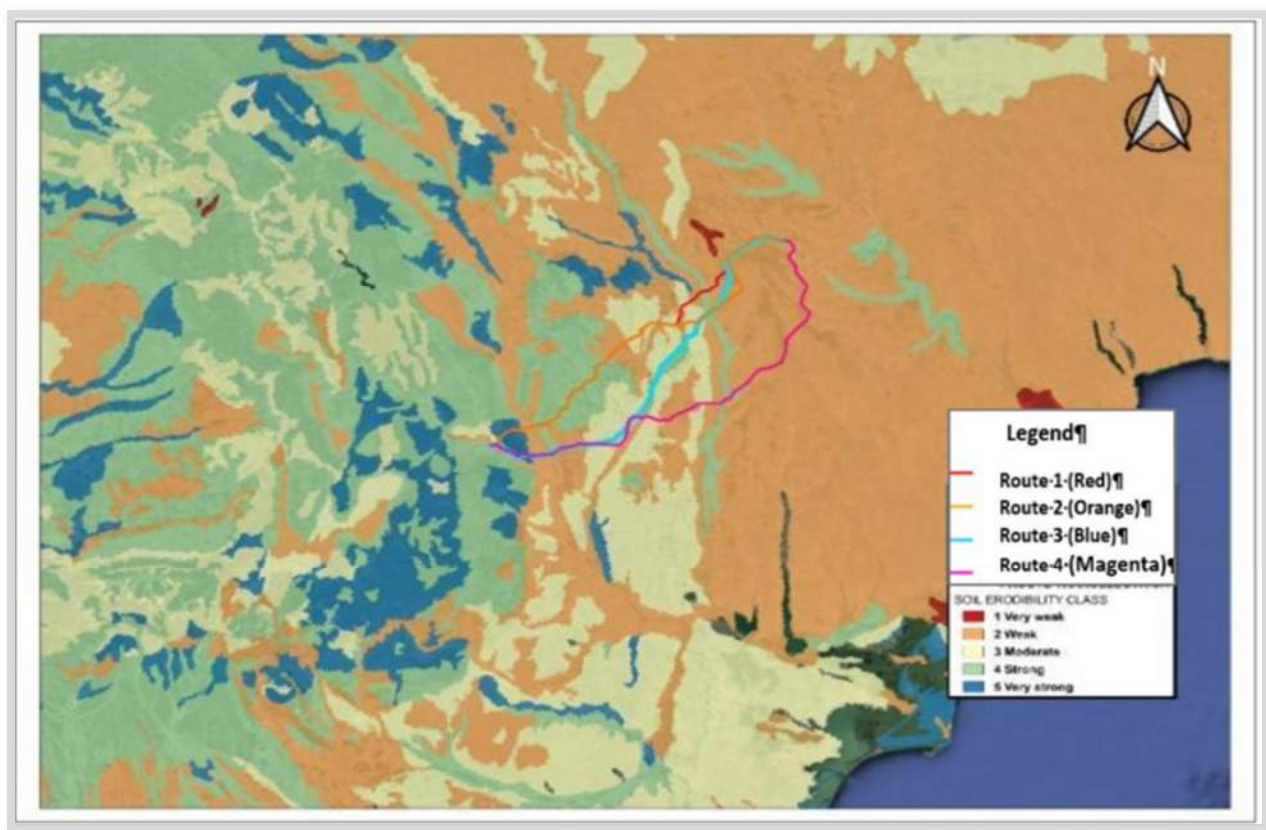


Figure 5-2 Erodibility Class of Soils Traversed Crossed By 400 KV T-Line Routes

Source: ESDAC – European Soil Data Centre

For the counties crossed by the analysed T-Line routes, the distribution of eroded soils is as follows¹⁵:

In Bacău County: the surface affected by erosion represents 59.22% (186,292 ha) of the total agricultural land (314,541 ha);

In Vaslui County: the surface affected by erosion represents 14.92% (59,917 ha) of the total agricultural land (401,586 ha);

In Iași County: the surface affected by erosion accounts for 169,852 ha.

¹⁵ Annual Environmental Bacău County Report, Bacău County Environmental Directorate, 2024, <https://djmbc.anmap.gov.ro/19-2-raport-anual-de-mediu-2/>; Annual Environmental Vaslui County Report, Vaslui County Environmental Directorate, 2024, <https://djmvvs.anmap.gov.ro/raport-anual-privind-starea-mediului-in-judetul-vaslui/>; Annual Environmental Iași County Report, Iași County Environmental Directorate, 2024, <https://djmis.anmap.gov.ro/rapoarte-anuale-2000-2022/>

As presented in **Figure 5-3**, the landslide susceptibility along the T-Line routes ranges from very low to high.

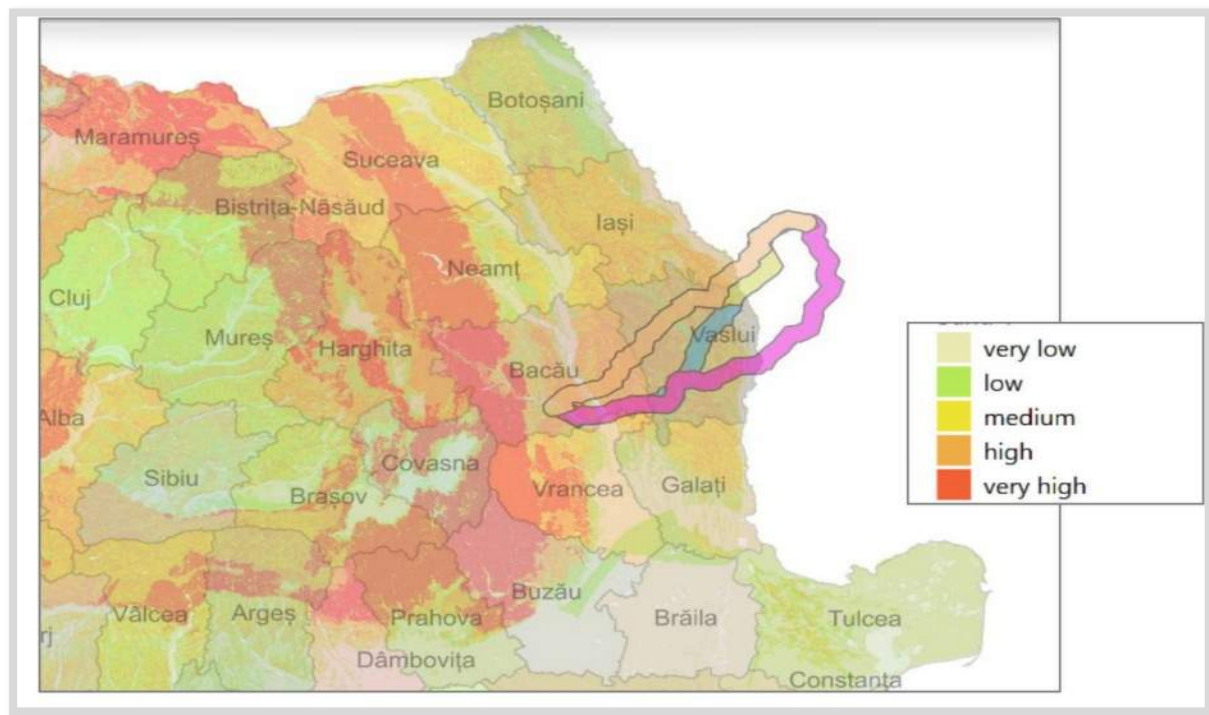


Figure 5-3 Landslides Susceptibility Within T-Lines Survey Corridors

Source: *European Landslide Susceptibility Map (ELSUS v2)*, *European Soil Data Centre (ESDAC)*, *Joint Research Centre (JRC)*

The seismic activity in the analysed area (environmental baseline survey corridor) is of 8 to 9 degrees on the Richter scale. The seismic maps of Romania in terms of acceleration and control period are presented below.

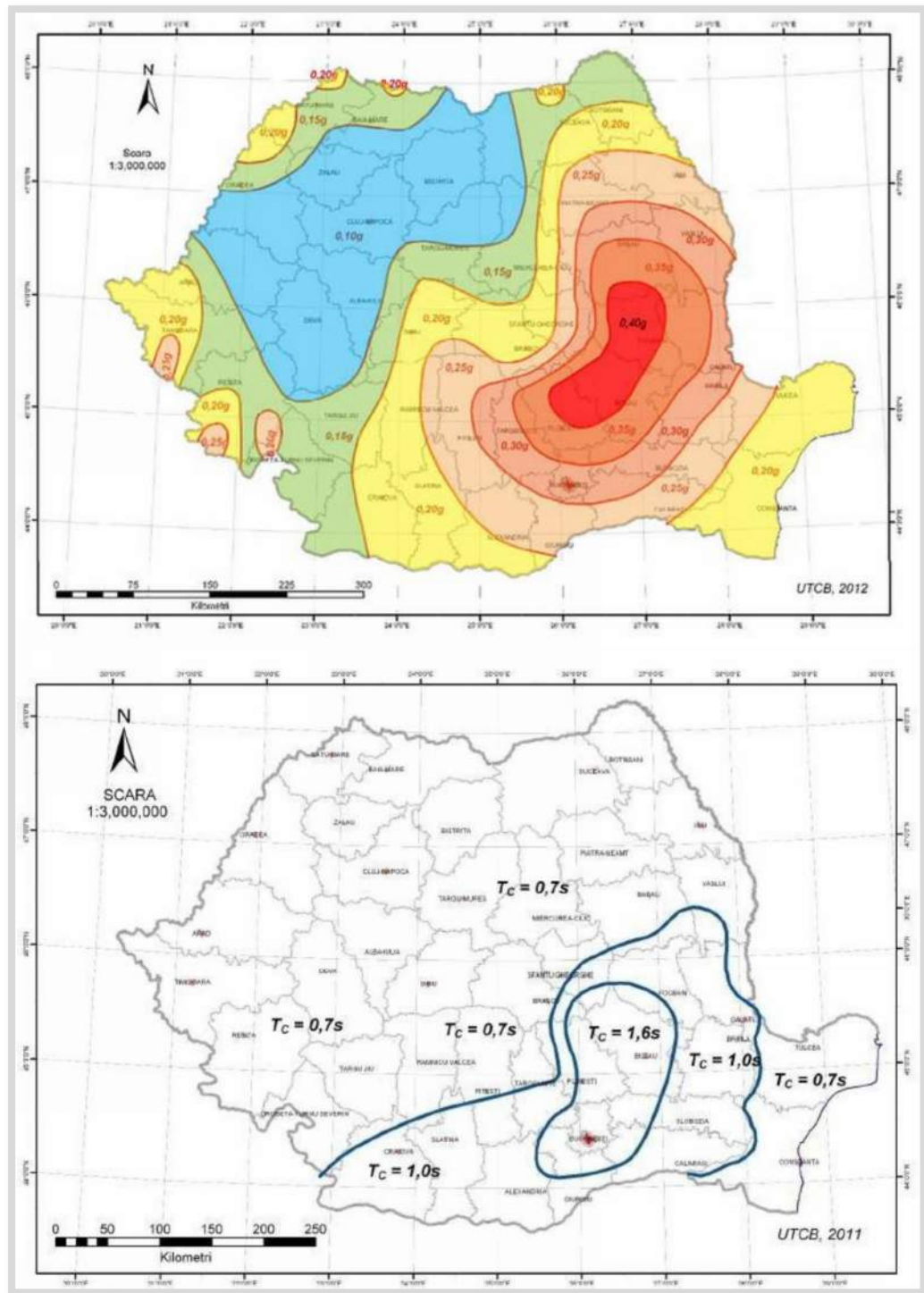


Figure 5-4 Seismic Maps of Romania In Terms of Acceleration and Control Period
Source: <https://mobee.infp.ro/despre-cutremurele-din-romania/harta-cutremurelor-din-romania>

5.1.4 Water Resources

Water resources available inside the environmental baseline survey corridor of the Project, located in the North-East Development Area of Romania (NUTS2 region RO21), are represented by surface waters (watercourses and natural and artificial lakes) and groundwater (artesian wells and fountains).

The analysed 400 kV T-Line routes, located in the northeastern part of the country, cross the Siret River basin (the river basins Trotus, Siret, Berheci, Drobeta, Tutova, Stemnic, etc, Telejna, Vaslui, Bârlad) and the Prut River basin (the Bohotin river basin, Jijia, Elan, Prut).



Figure 5-5 Map of hydrographic basins of Romania

Source: P. Găstescu, *WATER RESOURCES FROM ROMANIA. Potential, quality, territorial distribution, management* <https://www.limnology.ro/water2010/Proceedings/01.html>

The characteristics of the main watercourses inside the environmental baseline corridors are as follows:¹⁶

¹⁶ National report on the state of the environment - 2022

- Trotuș River: right tributary of Siret River, length 162 km, average flow 35.2 m³/s, reception basin 4,456 km²;
- Siret River: flows from Obcinele Bucovinei Mountains, has a length 647 km (of which 559 km are located on Romania's territory and 88 km on Ukraine's territory) and flows into the Danube, average flow 250 m³/s and reception basin 44,835 km²;
- Berheci River: right tributary of Bârlad River, length 92 km, average flow 1.6 m³/s, reception basin 1,021 km²;
- Drobotfor River: right tributary of Zeletin river, length 32 km, reception basin 87.6 km²;
- Tutova River: right tributary of Bârlad River, length 86 km, average flow 0.9 m³/s, reception basin 687 km²;
- Stemnic River: tributary of Bârlad River, length 32 km, reception basin 150 km²;
- Vaslui River: left tributary of Bârlad River, length 81 km, average flow 1.1 m³/s, reception basin 692 km²;
- Bârlad River: the most important left tributary of Siret River, length 207 km, average flow 11 m³/s, reception basin 7,220 km²;
- Prut River: the last major tributary of the Danube before the Danube Delta, which flows from the Carpații Păduroși (Ukraine) and marks the border between MD, RO and partially Ukraine: length 967 km, average flow 110 m³/s, reception basin 27,540 km²;
- Bohotin River: right tributary of Prut River, length 22 km, reception basin 107 km²;
- Jijia River: right tributary of Prut River, length 234 km, average flow 11.7 m³/s, reception basin 5,770 km²;
- Elan River: right tributary of Prut River, length 73 km, average flow 0.439 m³/s, reception basin 606 km².

In order to reducing the risk of flooding, most watercourses crossed by the analysed T-Line routes are protected by dams. The map of flood limits with an average overrun of 100 years with climate changes for rivers crossed by the analysed T-line routes are presented in **Figure 5-6**.

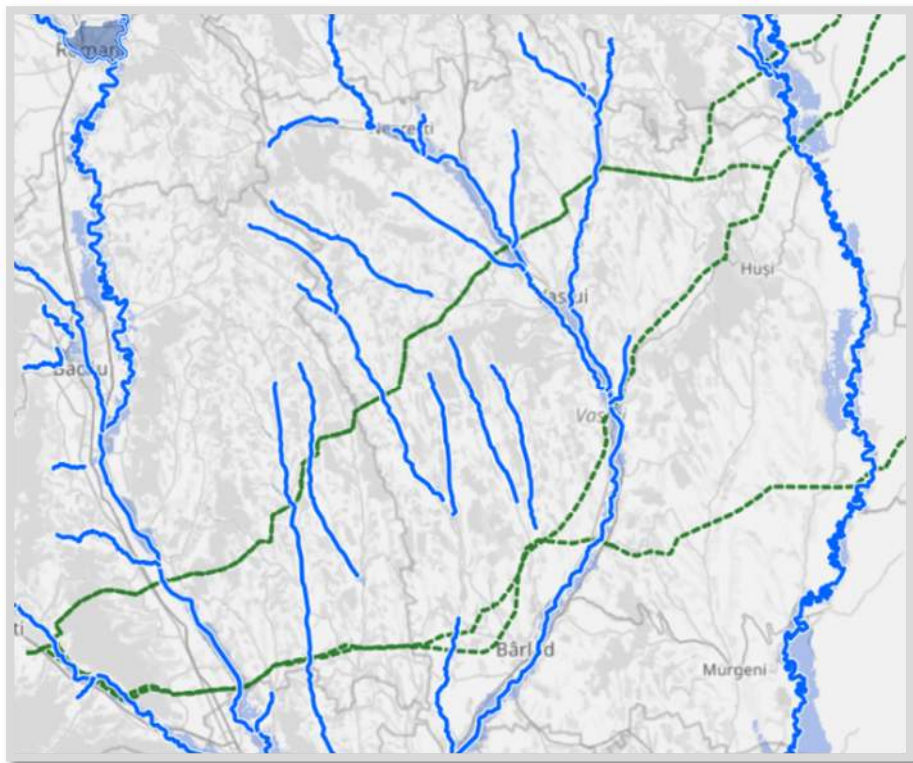


Figure 5-6 Flood limits with an average overrun of 100 years with climate changes

Source: Maps of Hazard and Flood Risk, <https://harticiclul2.inundatii.ro>

The water supply of the localities inside the survey corridor is assured by the following water resources:

Surface waters

- For Bacău County: the main water supplies are Uzului River through Lake Poiana Uzului for the system of Bacău and the other cities located Valea Trotuşului (Moineşti, Dărmăneşti, Târgu Ocna, Oneşti), and Ciobănuş river for the city Comăneşti;
- For Vaslui County: most of the lakes from Vaslui County are of anthropogenic nature, built for water inlets and flood prevention. The most important resources, which use the drinking water supply, are:

Table 5-2 2 Main Sources of water for Vaslui county

No.	Name of Water Source	River	Supplied Provider
1	Bârlad River	-	SAA Vaslui
2	Prut River	-	SAA Huşi
3	Lake Puşcaşi	Racova	SAA Vaslui
4	Lake Râpa Albastră	Simila	SAA Bârlad
5	Lake Căzăneşti	Stavnic	SAA Negreşti

No.	Name of Water Source	River	Supplied Provider
6	Lake Cuibul Vulturilor	Tutova	SAA Bârlad
7	Lake Solești	Vaslui	SAA Vaslui

Source: Regional project for the development of water and wastewater infrastructure in Vaslui county, in the period 2014 – 2020 FEASIBILITY STUDY

Underground Waters:

Within the River Basins crossed by the T-Line routes, a total of 13 groundwater bodies has been delineated (6 within the Siret River basin and 7 within the Prut-Bârlad River basin).

Within the Siret River basin, the T-Line routes cross one groundwater body: ROSI03 The Siret River floodplains and terraces and its tributaries (total area: 4,542 km²).

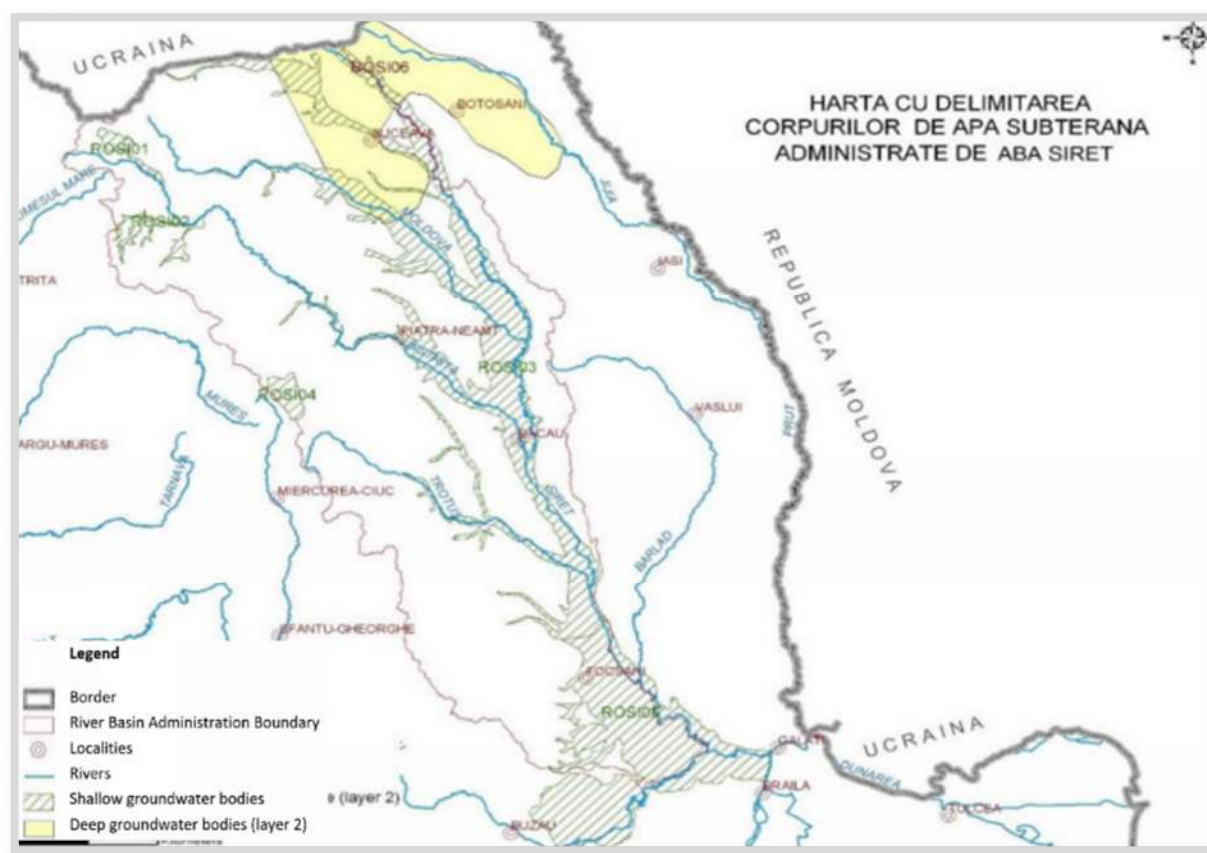


Figure 5-7 Groundwater Bodies, Siret River Basin

Source: Updated Siret River Basin Management Plan, Siret River Basin Administration

Within the Prut-Bârlad River basin, the T-Line routes cross three groundwater bodies:

- ROPR02 Floodplains and terraces of the Middle-Lower Prut and its tributaries (total area: 2,207 km²);

- ROPR03 / Bârlad River floodplain (total area: 1,109 km²);
- ROPR05 / Central Moldavian Plateau (total area: 12,646 km²).



Figure 5-8 Groundwater Bodies, Prut-Bârlad River Basin

Source: Updated Prut-Bârlad River basin Management Plan, Prut-Bârlad River Basin Administration

5.1.5 Natural Protected Areas

In Romania, one of the countries with the highest biodiversity in Europe, the following categories of natural protected areas are designated:

- *Natural protected areas of national interest*: Scientific Reserves; National Parks; Monuments of nature; Natural reserves; Natural parks;
- *Natural protected areas of international interest*: Natural sites of the natural and cultural world heritage; Geopark; Wetlands of international importance (RAMSAR); Biosphere reserves;

- *Natural protected areas of community interest* “Natura 2000” sites: Sites of community importance – SCI; Special areas of conservation - SAC; Special protected areas – SPA;
- *Natural protected areas of county or local interest* – established only on the public/private domain of administrative-territorial units, as the case may be, according to art. 5 alin. (1) lit. a) – c) from GEO no. 57/2007.
- *Natural Protected Areas of National Interest*

The environmental baseline survey corridors of the analysed 400 kV T-Line routes cross the following natural areas of national interest:

- Hârboanca Forest (National code 2.778, INSPIRE code RONPA0795);
- Bălteni Forest (national code 2.779, INSPIRE code RONPA0796);
- Prut River (national code 2.556, INSPIRE code RONPA0573).

- ***Natura 2000 Sites***

The Natura 2000 sites crossed by the baseline survey corridors of the analysed 400 kV T-Line routes are presented in **Figure 5-9**:

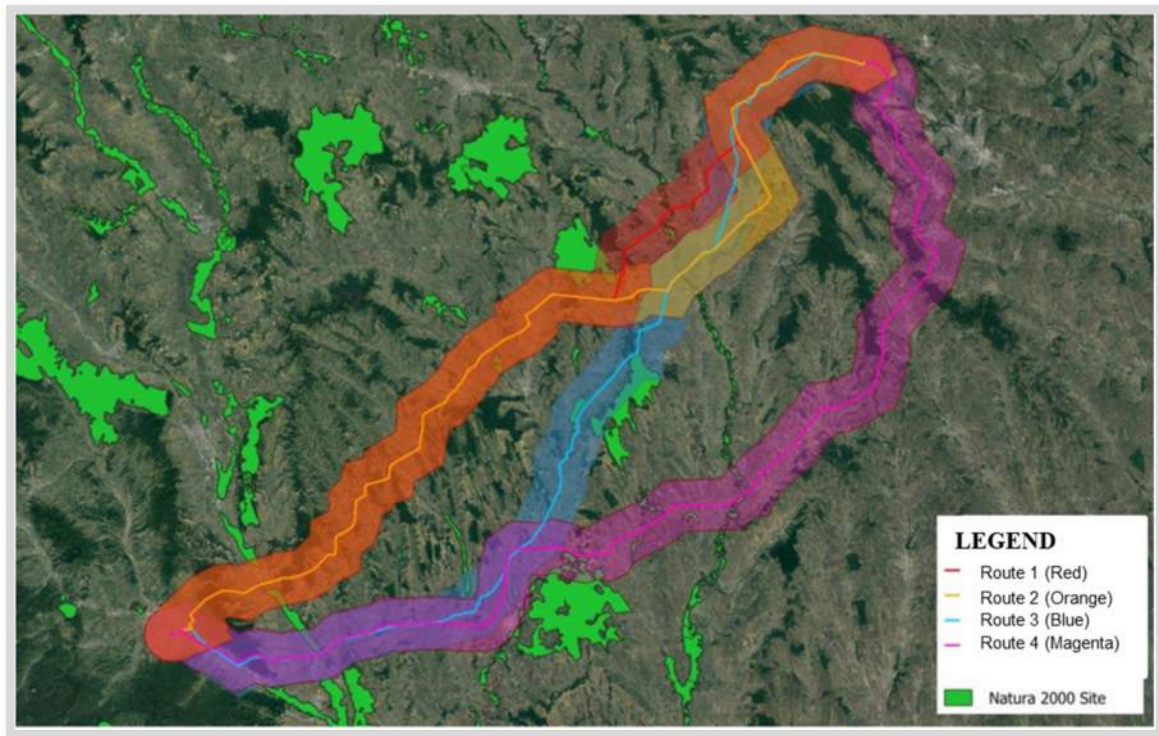


Figure 5-9 Natura 2000 Sites And T-Lines Baseline Survey Corridors

Source: European Environment Agency Datahub - <https://www.eea.europa.eu/en/datahub/datahubitem-view/6fc8ad2d-195d-40f4-bdec-576e7d1268e4>

In the baseline survey corridors related to the analysed 400 kV T-Line Strășeni - Gutinaș routes are located the Natura 2000 sites presented in **Table 5-2**.

Table 5-3 Natura 2000 Sites Within The 400 kV T-Line Baseline Survey Corridors

Route	Category of Protected Area	Name of Natural Protected Area	Surface of Natural Protected Area (ha)
Route 1 (Red)	ROSPA0063	Lacurile de acumulare Buhuși - Bacău - Berești	5.605,2
	ROSAC0158	Pădurea Bălteni - Hârboanca	535,2
	ROSPA0096	Pădurea Miclești	8.604,7
	ROSCI0213	Râul Prut	10.583,4
	ROSPA0168		7.659,2
Route 2 (Orange)	ROSPA0063	Lacurile de acumulare Buhuși - Bacău - Berești	5.605,2
	ROSAC0158	Pădurea Bălteni - Hârboanca	535,2
	ROSPA0096	Pădurea Miclești	8.604,7
	ROSCI0213	Râul Prut	10.583,4
	ROSPA0168		7.659,2
Route 3 (Blue)	ROSPA0063	Lacurile de acumulare Buhuși - Bacău - Berești	5.605,2
	ROSAC0162	Lunca Siretului Inferior	24.980,6
	ROSPA0071		37.479,5
	ROSAC0334	Pădurea Buciumeni - Homocea	4.987,2
	ROSAC0169	Pădurea Seaca - Movileni	50,7
	ROSPA0159	Lacurile din jurul Măscurei	1.139
	ROSCI0309		
	ROSCI0360	Râul Bârlad între Zorleni și Gura Gârbăvoșului	2.478,8
	ROSPA0167		2.339,7
	ROSPA0162	Mânjești	1.009,3
	ROSCI0335	Pădurea Dobrina - Huși	8.448,5
	ROSCI0041	Coasta Rupturile Tanacu	322
	ROSCI0213	Râul Prut	10.583,4
	ROSPA0168		7.659,2
Route 4 (Magenta)	ROSPA0063	Lacurile de acumulare Buhuși - Bacău - Berești	5.605,2
	ROSAC0162	Lunca Siretului Inferior	24,980.6
	ROSPA0071		37,479.5
	ROSAC0334	Pădurea Buciumeni - Homocea	4,987.2
	ROSCI0360	Râul Bârlad între Zorleni și Gura Gârbăvoșului	2,478.8
	ROSPA0167		2,339.7
	ROSPA0119	Horga - Zorleni	20,205.7
	ROSCI0286	Colinele Elanului	741.4

Route	Category of Protected Area	Name of Natural Protected Area	Surface of Natural Protected Area (ha)
	ROSPA0170	Valea Elanului	357.5
	ROSCI0213	Râul Prut	10,583.4
	ROSPA0168		7,659.2

Source: NATURA 2000 viewer <https://natura2000.eea.europa.eu/>

• **Important Bird Areas**

In Romania, 171 Important Bird Areas (IBA) are designated. The following IBA are located inside the baseline survey corridors of the T-Line routes:

- ROSPA0063 Buhuși reservoir- Bacău – Tătăraști, with a surface of 5,605 ha;
- ROSPA0071 Lunca Siretului Inferior, with a surface of 37,479,5 ha;
- ROSPA0119 Horga – Zorleni, with a surface of 20,205.7 ha;
- ROSPA0096 Miclești Wood, with a surface of 8,604.7 ha¹⁷.

¹⁷ Natura 2000 Viewer, EEA, https://natura2000.eea.europa.eu/?page=Page-1&views=Countries_View

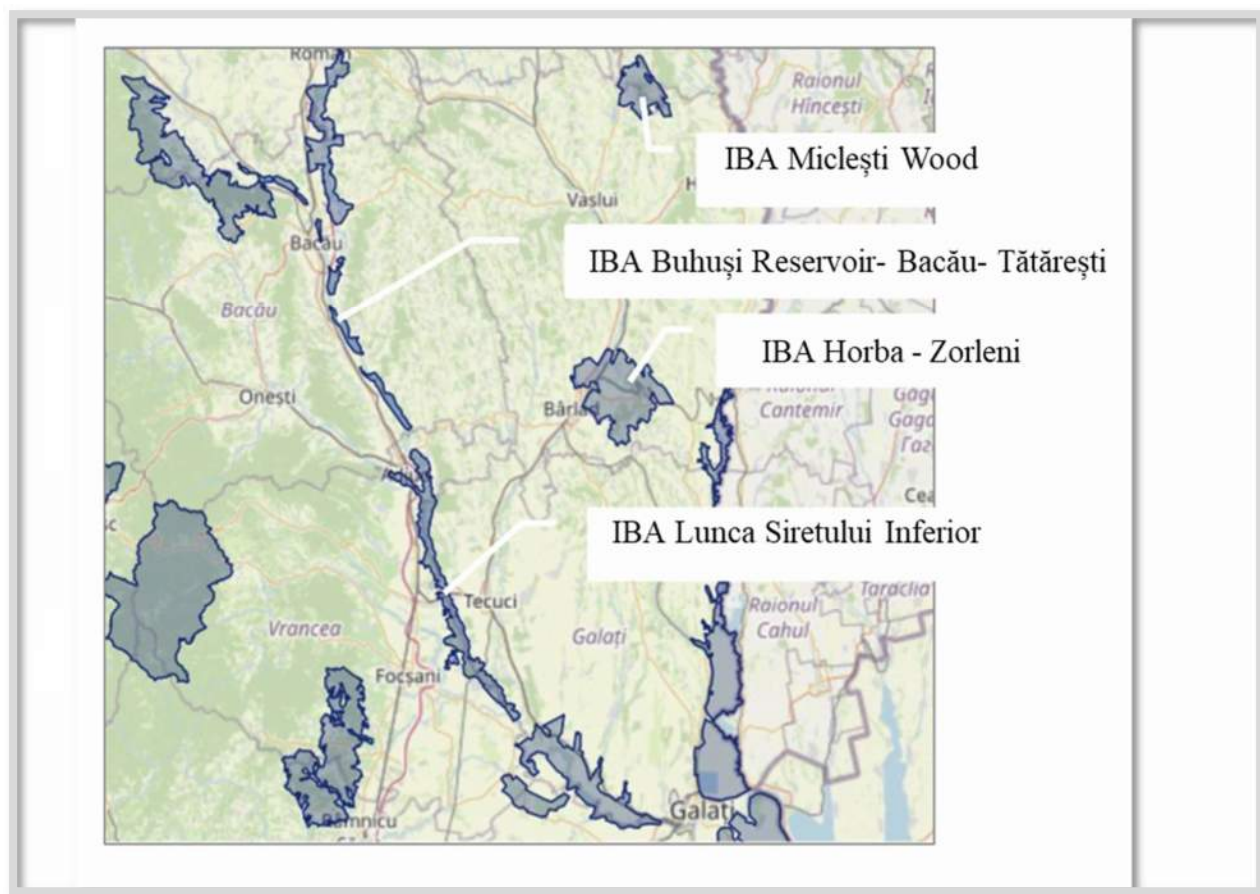


Figure 5-10 IBA Sites Nearby the Project Area

Source: Birdlife International, <https://datazone.birdlife.org/country/factsheet/moldova>

- **Ramsar Sites**

In Romania, there are 20 wetlands of international importance, none of them being crossed or near the baseline survey corridors of the project.

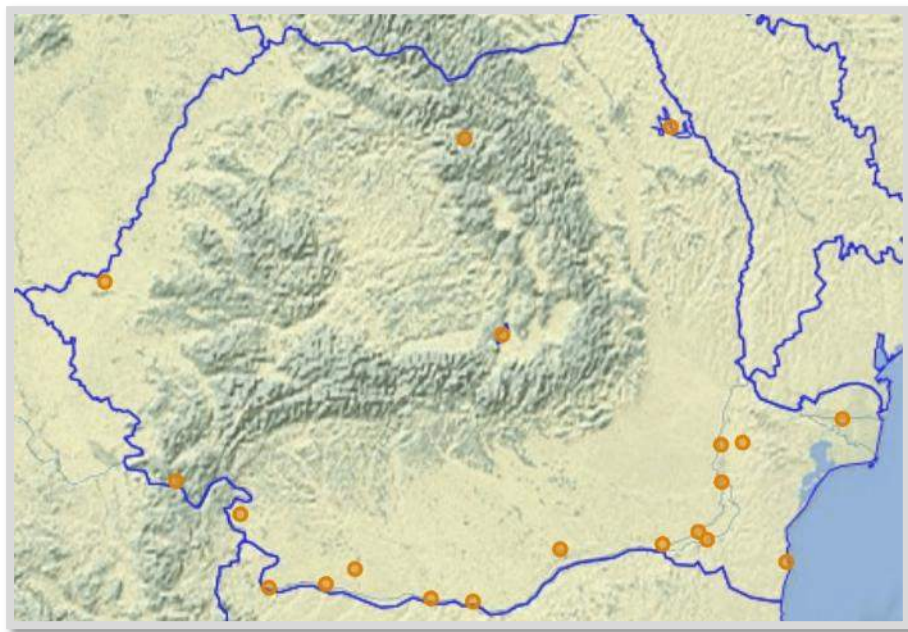


Figure 5-11 Ramsar Sites in Romania

Source: Ramsar Sites Information Service, <https://rsis.ramsar.org/>

• ***Biosphere Reservations***

In Romania, there are 2 Biosphere reservations: Pietrosu Rodnei (designated in 1979, Maramureș, Bistrița-Năsăud, surface 44,000 ha) and Delta Dunării (designated in 1990, Tulcea, Constanța, surface 580,000 ha)¹⁸. None of those are crossed or are in the vicinity of the baseline survey corridors of the Project.

Due to the geographical location and the presence of various habitats, optimal conditions for a large number of bird species, namely 320, are ensured in RO, of which 18 species are globally threatened (1 species critically endangered, 5 species endangered, 12 species vulnerable) and 15 species are near threatened, according to the IUCN Red List¹⁹. A significant number of these species, either nest in the country or are sedentary, being present throughout the year.

¹⁸ Romania Annual Environmental Report, 2022, Environmental Protection Agency, <https://www.anpm.ro/raport-de-mediu>

¹⁹ Data zone -Romania, BirdLife International, <https://datazone.birdlife.org/country/romania>

5.1.6 Forest Fund

In Romania, in 2024, the forest fund had a total area of 6,462 thousand ha, representing 27.7% of the country's territory. The majority of the national forest fund is owned by the state (48.1%) the rest being owned by territorial administrative units (16.1%) and private owners (35.8%).²⁰

The distribution of the forest fund by species and species groups is shown in **Figure 5-22**:

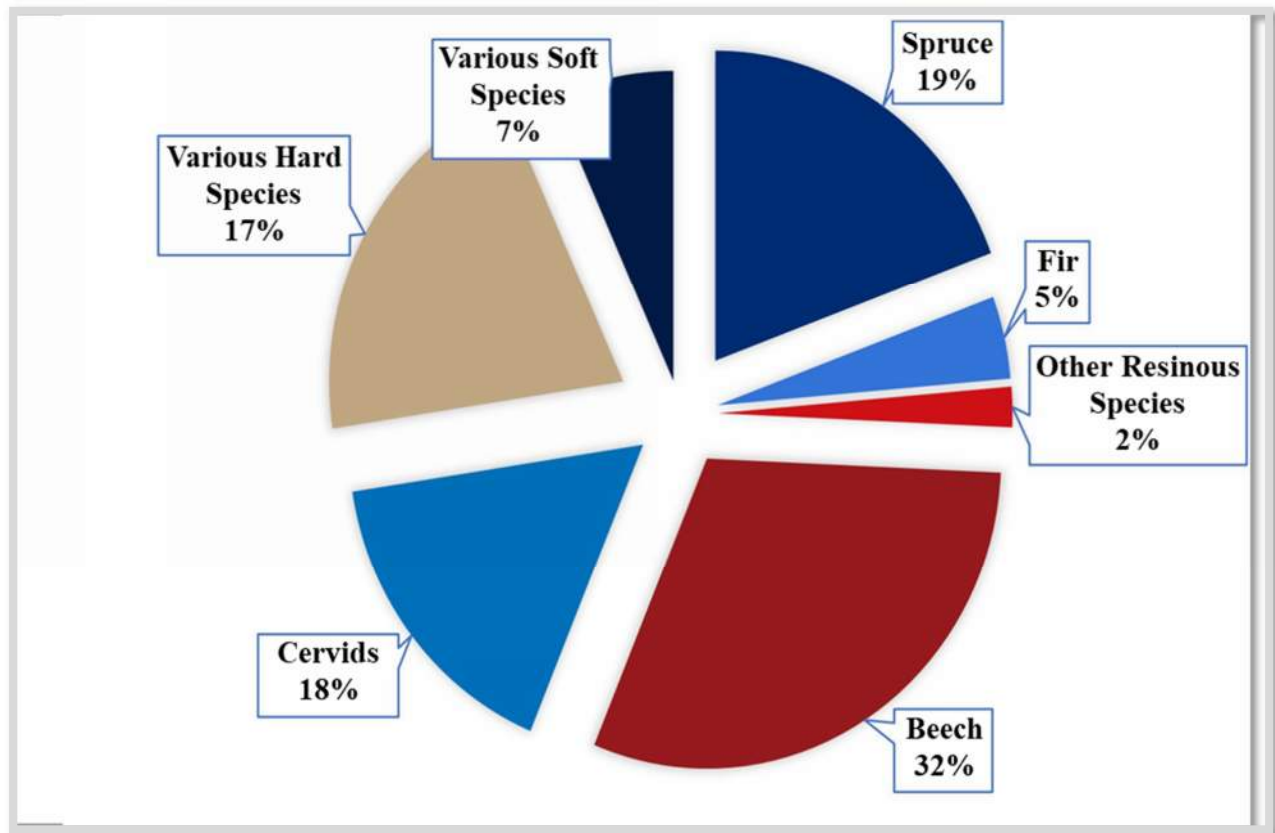


Figure 5-12 Forest Distribution Based on Species and Groups of Species

Source: Romania Annual Environmental Report, 2024, National Agency for Environment and Protected Areas,

20 Romania Annual Environmental Report, 2024, National Agency for Environment and Protected Areas, <https://anmap.gov.ro/wp-content/uploads/2025/10/Raport-anual-privind-Starea-Mediului-in-Romania-pe-anul-2024-1.pdf>

At the level of territorial administrative units crossed by the baseline survey corridors of the 400 kV T-Line Gutinas – Strasenî routes, the 2024 main characteristics in terms of total areas and property types are²¹:

The total area of the forest fund in Băcau County: 273,100 ha, of which 165,542ha (61%) is public property of the state, and 107,558ha (39%) is private property;

The total area of the forest fund of Vaslui County: 74,581 ha, of which 48,836 ha (65%) are property of the state and 21,443 ha (29%) are private property;

The total area of the forest fund of Iași County: 97,970 ha.

5.2 Environmental Baseline in Republic of Moldova

5.2.1 Air Quality

In Republic of Moldova, the air quality survey is assured through the national network for air quality monitoring, consisting of stationary and automatic monitoring stations, namely²²:

- 18 manual monitoring stations located in industrial areas of MD (Chișinău - 6 stations, Bălți - 2 stations, Bender - 4 stations, Tiraspol - 3 stations, Rîbnița - 2 stations, Leova – 1 transboundary station) which suppose the manual collection of the samples (3 times per day); the following substances are measured: solid suspensions, sulphur dioxide, carbon monoxide, nitrogen dioxide, soluble sulphates, nitrous oxide, phenol, formaldehyde;
- 2 new automatic air quality monitoring stations, one traffic-type in Chisinau municipality and one rural background type with industrial elements in the village of Mateuți, Rezina district for monitoring air pollutants (NO, NO₂, NO_x, sulphur dioxide, carbon monoxide, ozone, PM₁₀, PM_{2.5}).

21 Annual Environmental Bacău County Report, Bacău County Environmental Directorate, 2024, <https://djmbc.anmap.gov.ro/19-2-raport-anual-de-mediu-2/>; Annual Environmental Vaslui County Report, Vaslui County Environmental Directorate, 2024, <https://djmvsv.anmap.gov.ro/raport-anual-privind-starea-mediului-in-judetul-vaslui/>; Annual Environmental Iași County Report, Iași County Environmental Directorate, 2024, <https://djmis.anmap.gov.ro/rapoarte-anuale-2000-2022/>

22 Monitoring Program on the territory Republic of Moldova, 2024, <https://am.gov.md/sites/default/files/document/attachments/Program%20de%20monitorizare%20a%20LRM%2C%202024.pdf>

Inside the environmental baseline survey corridors of the Project, the nearest air quality monitoring station is in Chişinău municipality.

In 2024, in Chişinău municipality, the following maximum momentary concentrations were registered: solid suspensions: 2.7 mg/m³ (18 days with CMA²³ exceedances); NO₂: 0.13 mg/m³ (276 days with CMA exceedances); SO₂: 0.035 mg/m³ (CMA was not exceeded); CO: 20 mg/m³ (47 days with CMA exceedances)²⁴.

In MD, the main sources of air pollution are represented by the power stations, small combustion units for households heating, transport sector (car, rail and air transport) and other industrial activities.

In Chişinău municipality, the main impact on air quality is due to the operation of the CHPP – Combined Heat and Power Plant (SA „Termoelectrica ” SA), industrial sector, represented by: SA „Apă-Canal Chişinău”, SA „Bucuria”, SA „Zorile”, SA. Supraten”, IS „Fabrica de Sticlă din Chişinău” and road transport.

5.2.2 Climate Changes

MD is a non-Annex I Party to the United Nations Framework Convention on Climate Change (ratified in 1995). In 2003, MD ratified the Kyoto Protocol.

Between 1990 and 2022, total CO₂ emissions (without LULUCF) decreased by approximately 74.6% (from approx. 37.00 Mt in 1990 to 9.40 Mt in 2022). CH₄ emissions (without LULUCF) had decreased by approximately 61.8% (from approx. 6.00 Mt CO₂ equivalent in 1990 to 2.29 Mt CO₂ equivalent in 2022), and N₂O emissions (without LULUCF), respectively, had decreased by 58.7% (from approx. 2.48 Mt CO₂ equivalent in 1990 to 1.02 Mt CO₂ equivalent in 2022). Even if the share of F-gases in the structure of total emissions is currently insignificant, the evolution of these emissions revealed a stable upward trend in recent years (increasing from approx. 0.94 kt CO₂ equivalent in 1995 to approx. 234.84 kt CO₂ equivalent in 2022).²⁵

23 CMA: Concentrația Maximă Admisibilă/ Maximum Allowable Concentration

24 Natural Resources and the Environment in the Republic of Moldova Statistical Publication, 2025 Edition, https://statistica.gov.md/en/natural-resources-and-environment-in-republic-of-moldova-editions-2010-2025-9688_59475.html

25 Republic of Moldova’s first Biennial Transparency Report, 31 December 2024, <https://unfccc.int/sites/default/files/resource/BTR1-EN-270125.pdf>

In 2022, in terms of the GHG emissions type, the highest share from total emissions has the CO₂ emissions (72.6%), followed by CH₄ emissions (17.7%), N₂O emissions (7.9%) and F-gases (1.8%).

In general, the Energy Sector has the greatest contribution to the national GHG emissions, with a share of 69.2% followed by Waste (10.8%), Agriculture (10.1%), and Industrial Processes and Product Use (6.7%).

MD is extremely vulnerable to climate change. According to the Fifth National Communication of the Republic of Moldova to the United Nations Framework Convention on Climate Change (2023)²⁶, in the last 133 years (1887-2020), a positive trend of annual average temperatures (with more than 1.2°C) and of annual average rainfall (51.3 mm) were registered.

According to the data reported by the National Bureau of Statistics of Republic of Moldova for the nearest meteorological station (Chişinău), during the 2022-2024 period, the following relevant data were recorded: annual average temperature: 2022: 11.7°C; 2023: 12.7°C; 2024: 13°C; monthly minimum temperature: 2022, January: -10.7°C; 2023, February: -9.2°C; 2024, January: -12.8°C; monthly maximum temperature: 2022, July: 34.6°C; 2023, August: 37.4°C; 2024, July: 38.8°C; annual average rainfall: 2022: 444 mm; 2023: 430 mm; 2024: 715 mm; monthly maximum precipitation: 2022, July: 83 mm; 2023, April: 133 mm; 2024, September: 177 mm)²⁷.

5.2.3 Soil and Subsoil

The analysed 400 kV T-Line Străşeni - Gutinaş routes cross the physical-geographical subregions: The Forest Plains of Western, Eastern and Southern Central Moldova and the Silvestepian Plains and Depression of Sărata.

Inside the baseline survey corridors of the Project, there are predominantly grey soils; there are also scattered fragmented chernozems, brown soils and pseudorendzinas.

The soils quality in MD is strongly influenced by climatic conditions (high temperatures, low rainfall), inappropriate agricultural practices (ineffective methods for agricultural exploitation, use of fertilizers and pesticides) and abusive deforestation. As a result, the soil is affected by erosion, degradation and landslides.

26 Fifth National Communication of the Republic of Moldova, 2023, <https://unfccc.int/documents/627100>

27 Statistical Yearbook of the Republic of Moldova, edition 2025, National Bureau of Statistics of Republic of Moldova, https://statistica.gov.md/en/buletin-statistic-trimestrial-editiile-2005-2021-9877_59482.html

23 2023 IPM Anuary – “Protection of the environment in the Republic of Moldova”, https://ipm.gov.md/upfiles/menu_files/ANUARUL%202024.pdf

At the level of territorial-administrative units crossed by the analysed 400 kV Strășeni - Gutinaș T-Line routes, the eroded soils occupy a moderate surface (175,276 ha compared with the total eroded lands at national level of 866,074 ha); the distribution of eroded soils is as follows: Hâncești district 4.73%; Nisporeni district 1.97%; Leova district 3.21%; Cimișlia district 3.90%; Ialoveni district 3.20%; Chișinău Municipality 1.38%; Strășeni district 1.85%.²³

The distribution of eroded soils at the district level is as follows:

- Hâncești district: low eroded soils 49.11%; moderately eroded soils 32.28%; high eroded soils 18.6%;
- Nisporeni district: low eroded soils 48.05%; moderately eroded soils 37.05%; high eroded soils 20.19%;
- Leova district: low eroded soils 51.1%; moderately eroded soils 33.05%; high eroded soils 15.85%;
- Cimișlia district: low eroded soils 59.58%; moderately eroded soils 29.87%; high eroded soils 10.55%;
- Ialoveni district: low eroded soils 47.81%; moderately eroded soils 34.81%; high eroded soils 17.37%;
- Chișinău Municipality: low eroded soils 56.80%; moderately eroded soils 30.81%; high eroded soils 12.38%;
- Strășeni district: low eroded soils 48.89%; moderately eroded soils 34%; high eroded soils 17.11%.

In terms of landslides, the territorial-administrative units crossed by the analysed 400 kV T-Line Gutinaș – Strășeni routes are differently affected: low damage in Leova, Cimișlia and Strășeni districts and Chișinău Municipality, moderate damage in Hâncești and Ialoveni districts and high damage in Nisporeni district.

The baseline survey corridors of the Project are characterised by a high seismic activity generated by the alpine region of the East Carpathians (Vrancea, RO), where earthquakes epicentres are located.

The seismic activity in the analysed area is of 7 degrees on Richter scale.

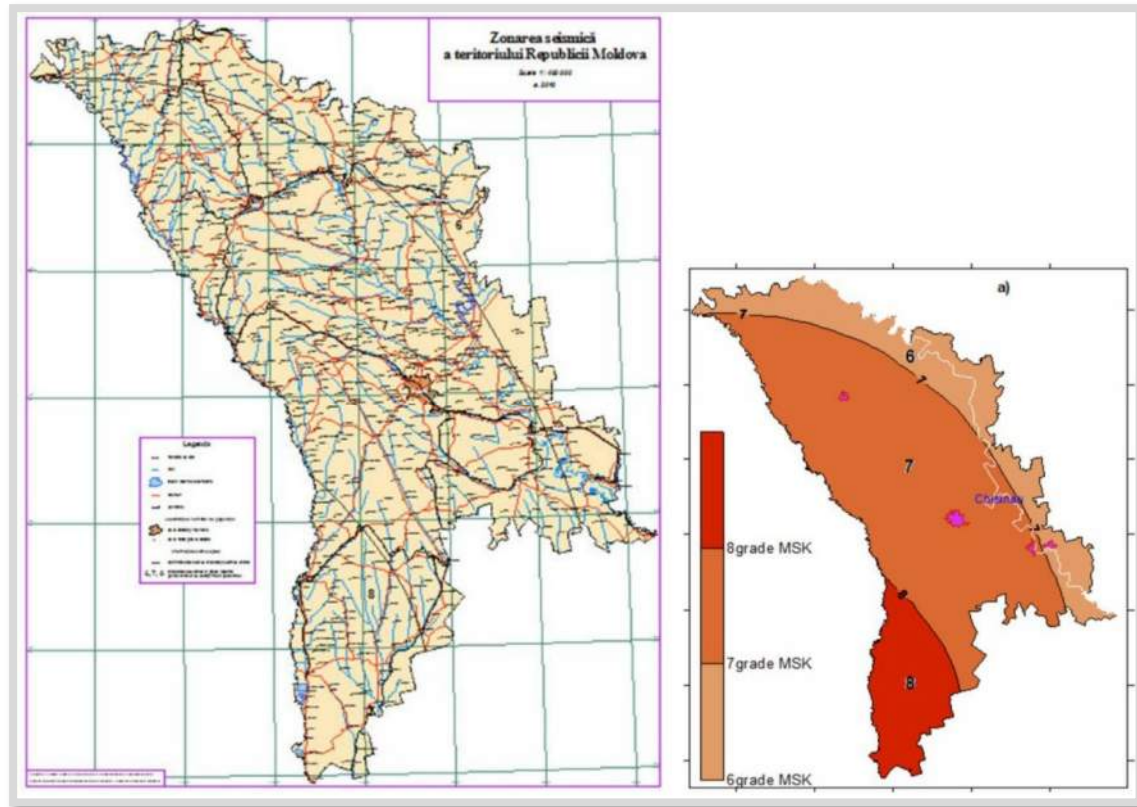


Figure 5-13 Seismic Maps of Republic of Moldova

Source: Country report: *The Republic of Moldova*, https://eurocodes.jrc.ec.europa.eu/sites/default/files/2022-06/5_Country_Report_Moldova.pdf

5.2.4 Water Resources

The water resources available inside the environmental baseline survey corridors of the Project, situated in the Central and Southern Development Zone of MD, are represented by surface waters (watercourses, natural and artificial lakes) and groundwater (artesian wells and wells).

The analysed 400 kV T-Line routes, located in the central part of the country, cross the Prut River basin district (Sărata, Lăpușna, Nârnova and Cogâlnic rivers basins) and Nistru River district basin (Bâc, Ișnovăț and Botna rivers basins), as presented in the **Figure 5-24**:

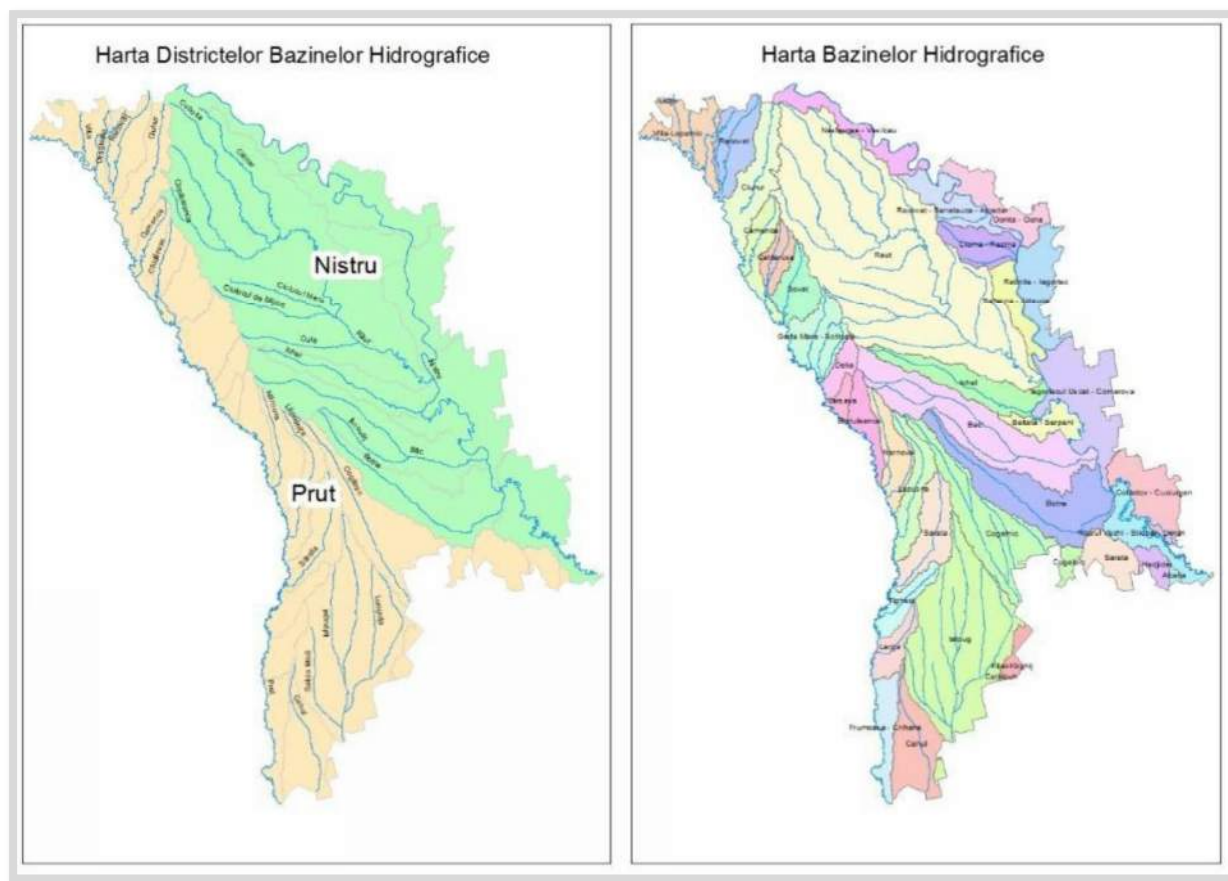


Figure 5-14 River Basins Districts and River Basin Within The T-Line Baseline Survey Corridors

Source: Agency "Apele Moldovei" <https://www.apelemoldovei.gov.md/pageview.php?l=ro&idc=134&>

The characteristics of the main watercourses within the baseline survey corridors of the Project, are the following:

- Prut River, the last major tributary of the Danube before the Danube Delta, which flows from the Carpații Păduroși (Ukraine) and marks the border between MD, RO and partially Ukraine: length 967 km, average flow 110 m³/s, reception basin 27,540 km²;
- Sărata River, left tributary of Prut River, length 59 km;
- Lăpușnița River, left tributary of Lăpușna River, length 21 km;
- Nârnova River, tributary of Prut River, length 49 km, reception basin 358 km²;
- Cogâlnic River, left tributary of Răut River, length 48 km, reception basin 350 km²;
- Bâc River, right tributary of Nistru River: length 155 km, average flow 1 m³/s, reception basin 2,150 km²;
- Ișnovăț River, right tributary of Bâc River, length 59 km, reception basin 371 km²;

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu

Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

- Botna River, tributary of Prut River, length 152 km, reception basin 1,540 km².

In terms of flood risk, according to the Management Plan for Danube - Prut and Black Sea River basin district, in the baseline survey corridors, a large part of the Prut River meadow is protected by dams. The tributaries of the Prut River generally have narrow valleys, dams and reservoirs in some locations. Around each river there are localities with an average flood risk; high risk areas do not exist.

The increase in the frequency and intensity of floods are high in Hâncești, Nisporeni, Ialoveni, Leova, Strășeni districts and moderate in Cimișlia district.

The water supply of the villages situated inside the baseline survey corridors of the Project is assured from the following water resources:

- Surface water, ensured from the following main catchments:
 - Nistru River: Vadul lui Vodă catchment, the biggest surface water catchment in Moldova, with the function of supplying water to Chișinău municipality, with the possibility of extension to neighbouring districts such as Strășeni and Călărași districts;
 - Prut River: 4 main catchments in Ungheni (2), Nisporeni (Grozești – in construction) and Hâncești (Cotul Morii – in construction), with the function of supplying water to their respective district; 3 main catchments in Leova, Cantemir and Cahul districts, with the function of supplying water to the localities from the respective districts;
- Groundwater reserves, potable and technical quality; the main groundwater reserves within the Project location area (Chișinău municipality, Hâncești, Nisporeni, Leova, Ialoveni, Strășeni și Cimișlia districts) are presented in **Table 5-4**.

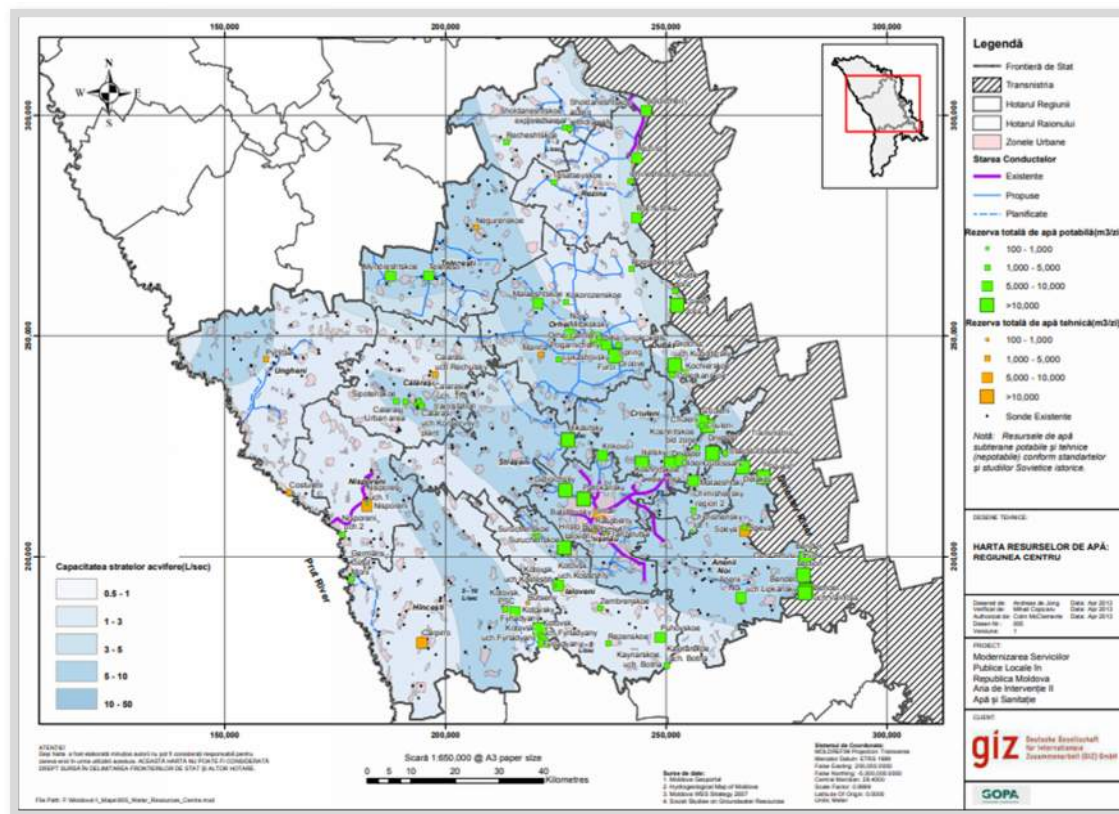
Table 5-4 Groundwater Reserves Inside the Baseline Survey Corridors of the Project

Raions / Municipality	Groundwater Reserves, Potable Quality (M ³ /Day)	Groundwater Reserves, Technical Quality (M ³ /Day)	Total Groundwater Reserves (M ³ / Day)	Pollution Grade
Chişinău Municipality	46,760	10,900	57,660	-
Hânceşti	37,700	7,240	44,940	Moderate
Nisporeni	3,000	7,600	10,600	High
Leova	14,000	-	14,000	Low
Ialoveni	63,800	1,500	65,300	High
Străşeni	16,500	-	16,500	Moderate
Cimişlia	24,600	-	24,600	Low

Source: Sectorial Regional Programs for Water Supply and Sewerage for the Central and Southern Development Regions

- Artesian deep wells, with limited production capacity (up to 10 m³/h), located in each village.

The main groundwater resources exploit in the districts located inside the baseline survey corridors of the Project are presented in **Figure 5-15**.



- **Delimited according to the classification of the International Union for Conservation of Nature:**

- Scientific reservation;
- National Park;
- Monument of nature;
- Natural reserve;
- Landscape reservation (of geographical landscape);
- Resource reservation;
- Area with multifunctional management;

- **Which do not consider the classification of the International Union for Conservation of Nature:**

- Dendrological garden;
- Monument of landscape architecture;
- Zoo;

- **Established by international regulations:**

- Biosphere Reserve (UNESCO Programme)
- Wet area of international importance (Ramsar Convention)
- Emerald sites (Bern Convention);
- Area of Aquafaunistic importance (IBA).

- **The National Ecological Network of Republic of Moldova.**

The National Ecological Network in MD, based on Law no. 49/2007 regarding the ecological network and Decision no. 593/2011 on the approval of the National Program to create the national ecological network for the period 2011 - 2018, includes all natural ecosystems, physically and functionally merge for establishing an ecological balance.

The 400 kV Strășeni – Gutinaș T-Line routes cross the Prut international ecological corridor, a proposed ecological corridor and some natural protected areas of national importance with protected adjacent zones.

The map of the National Ecological Network of MD is presented in **Figure 5-16**:

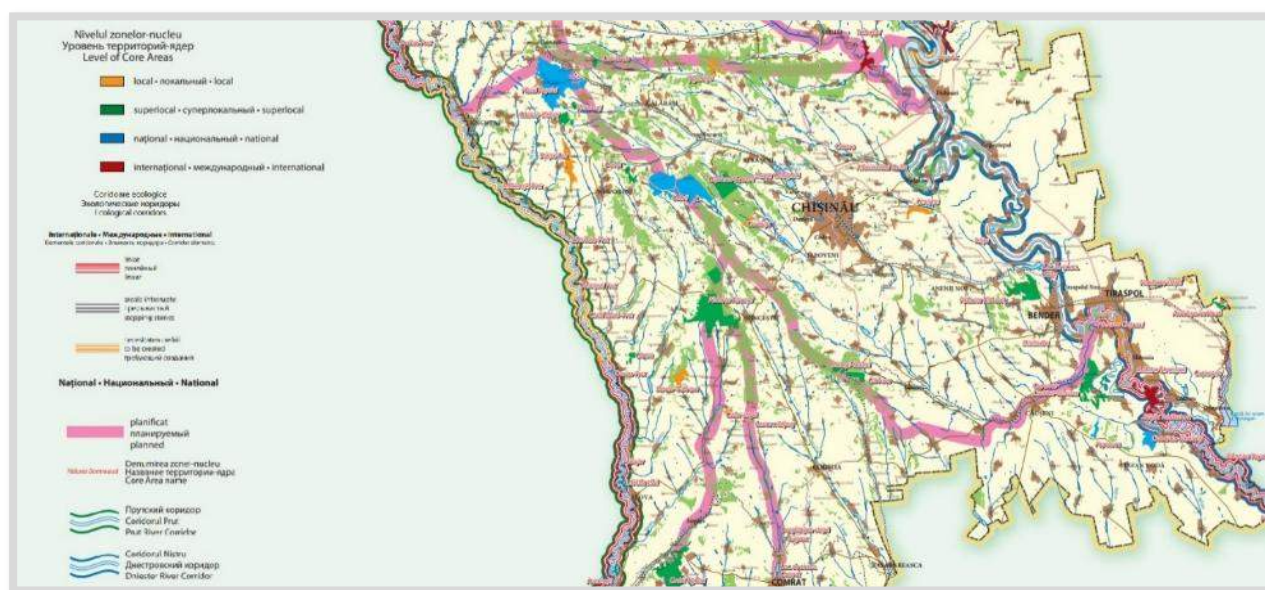


Figure 5-16 National Ecological Network

Source:

<https://www.bioticamoldova.org/storage/files/14H%C4%83r%C8%9Bile%20Re%C8%9Belei%20Ecologice%20Na%C8%9Bionale%20R.%20Moldova.pdf>

In particular, inside the baseline survey corridors of the analysed 400 kV Strășeni - Gutinaș T-Line routes, there are the natural protected areas presented in **Table 5-5**.

Table 5-5 Natural Areas Protected by the State Inside the Baseline Survey Corridors of T-Line Routes

Route	Natural Protected Area Category ³⁰	Name Of Natural Protected Area	Surface Of Natural Protected Area (Ha)	Width Of Protected Area (M)	Owner
Route 1 (Red)	MNH	Izvorul din Nemțeni	0.5	-	Î. A. "Hlopești"
	RNS	Nemțeni	20.9	700-1000	GSS Hânceni
	RNS	Zberoaia-Lunca	147.9	700-1000	GSS Nisporeni
	MNGP	Hârtopul de lângă or. Nisporeni	200.0	500-1000	Firma agricolă "Nisporeni"
	RP	Vila Nisporeni	3,499.0	700-1000	GSS Nisporeni
	ANPP	Bujor RNS	235.0	-	-
	RP	Dolna	389.0	700-1000	GSS Nisporeni

30 MNGP: Geological and paleontological monuments of nature; RS: Scientific nature reserves; MNBas: Monuments of the Botanical Nature - secular trees; RNS: Natural Forest reserves; RP: Landscape reserves; RR: Resource reserves; ANPP: New areas with protection potential; AMMpfp: Areas with multifunctional management - forests; MNBs: Monuments of the Botanical Nature - forest

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu

Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

Route	Natural Protected Area Category ³⁰	Name Of Natural Protected Area	Surface Of Natural Protected Area (Ha)	Width Of Protected Area (M)	Owner
	RS	Codru	15,277.0	100-150	Autoritatea centrală pentru mediu
	AMMsrvl	Luncă cu bumbăcăriță	15.0	-	Î. A. "Lozova"
	MNGP	Râpa "La Chetrărie"	3.0	500-1000	Primăria s. Vorniceni
	RP	Voloca Verbca	407.0	700-1000	GSS Călărași
Route 2 (Orange)	RNS	Nemțeni	20.9	700-1000	GSS Hânceni
	MNGP	Hârtopul de lângă or. Nisporeni	200.0	500-1000	Firma agricolă "Nisporeni"
	RP	Vila Nisporeni	3,499.0	700-1000	GSS Nisporeni
	ANPP	Bujor RNS	235.0		-
	RP	Dolna	389.0	700-1000	GSS Nisporeni
	RS	Codru	15277.0	100-150	Autoritatea centrală pentru mediu
	AMMsrvl	Luncă cu bumbăcăriță	15.0	-	Î. A. "Lozova"
	MNGP	Râpa "La Chetrărie"	3.0	500-1000	Primăria s. Vorniceni
	RP	Voloca Verbca	407.0	700-1000	GSS Călărași
Route 3 (Blue)	RP	Voloca Verbca	407.0	700-1000	GSS Călărași
	ANPP	Bujor RNS	235.0		-
	RP	Dolna	389.0	700-1000	GSS Nisporeni
	RS	Codru	15,277.0	100-150	Autoritatea centrală pentru mediu
	AMMsrvl	Luncă cu bumbăcăriță	15.0	-	Î. A. "Lozova"
	MNGP	Râpa "La Chetrărie"	3.0	500-1000	Primăria s. Vorniceni
Route 4 (Magenta)	RNM	Ecosistemul acvatic "Lebăda Albă"	30.0	-	Primăria or. Leova
	AMMsrvl	Luncă inundabilă cu vegetație de baltă	50.0	-	Primăria or. Leova
	RNS	Vila Caracui	84.0	700-1000	GSS Hâncești
	RNS	Molești	5.0	700-1000	GSS Cimișlia
	RNS	Molești-Răzeni	250.7	700-1000	GSS Cimișlia
	MNGP	Aflorimentul Costești	1.0	500-1000	Primăria s. Costești, S.A. "Ialoveni"
	MNGP	Reciful Ialoveni	3.0	500-1000	Asociația Științifică de Producție "Codru"
	RNS	Sector-etalon de pădure	110.2	700-1000	GSS Strășeni

Source: Cadastre of Protected Natural Areas, Institute of Ecology and Geography, <https://ieg.md/cadastrul-ariilor-protejate>

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Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

The map of natural protected areas by the state in the districts crossed by analysed T-Line routes is presented in **Figure 5-17**.



Figure 5-17 Map Of Natural Areas Protected by the State In The Districts Crossed by the Baseline Survey Corridors of the 400 kV T-Line Routes

Source: Cadastre of Protected Natural Areas, Institute of Ecology and Geography, <https://ieg.md/cadastrul-ariilor-protejate>

• Emerald Network

The Emerald network is based on the same principles as Nature 2000 network, representing its extension for non-EU countries.

The Emerald sites adopted by the Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 1979) within the 400 kV T-Line Gutinaș – Strășeni baseline survey corridors are:

- Lebăda Albă (code MD0000044, surface 100,0 ha);
- Châzlar – stepă (code MD0000048, surface 301.0 ha);
- Lunca Ialplug (code MD0000043, surface 62.0 ha);
- Pădurea Hîncești (code MD0000019, surface 11,290.0);
- Codrii Strășenilor (code MD0000010, surface 18,500.0 ha);

- Aria Naturală Nemțeni (code MD0000042, surface 288.0 ha);
- Zberoaia – Prut (code MD0000037, surface 381.0 ha);
- Vila Nisporei (code MD0000028, surface 5,451.0 ha);
- Codru (code MD0000004, surface 6,498.0 ha).

The location of analysed 400 kV Strășeni - Gutinaș T-Line routes / baseline survey corridors in relation with the Emerald sites is presented in **Figure 5-18**.

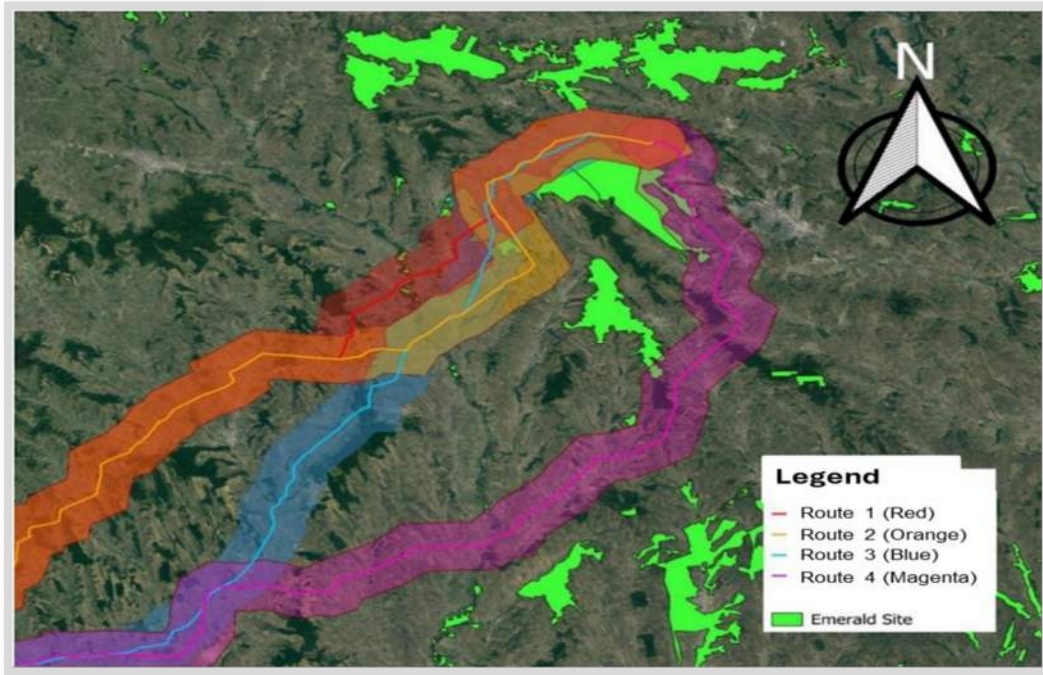


Figure 5-18 The T-Line Routes - Baseline Survey Corridors and Emerald Network

Source: European Environment Agency Datahub, <https://www.eea.europa.eu/en/datahub/datahubitem-view/4c4c8086-c940-400b-9064-29063143b2de>

• Important Bird Areas

In MD, Birdlife International recognizes 11 Important Birds Areas (IBA)³¹. Within the studied area for the Project located 3 (three) IBAs: IBA Lower Prut River and Manta-Beleu Lake (code MD007, surface 19,152 ha), IBA Hâncești Forest (code MD010, surface 14,405 ha) and IBA Central Forest (code MD005, surface 18,324 ha).

³¹ Birdlife International, <https://datazone.birdlife.org/country/moldova/ibas>

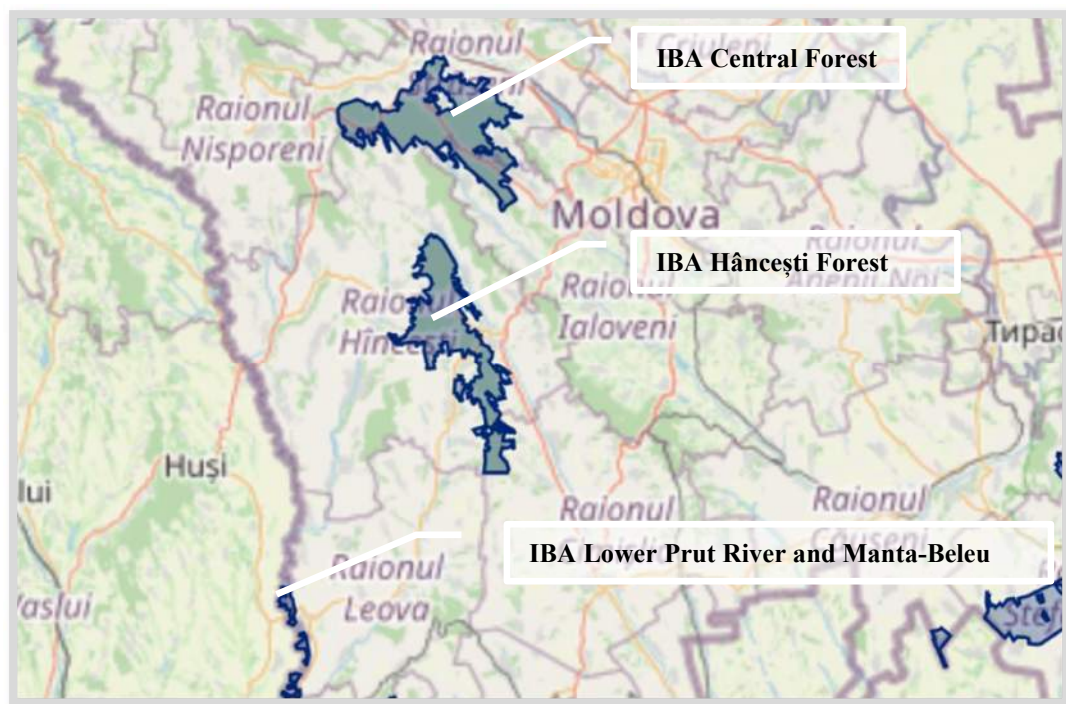


Figure 5-19 IBA Sites Nearby the Project Area

Source: Birdlife International, <https://datazone.birdlife.org/country/factsheet/moldova>

• Ramsar Sites

In MD, there are designated three wetlands of international importance, none of them crossing or being in the vicinity of the baseline survey corridors of the Project.

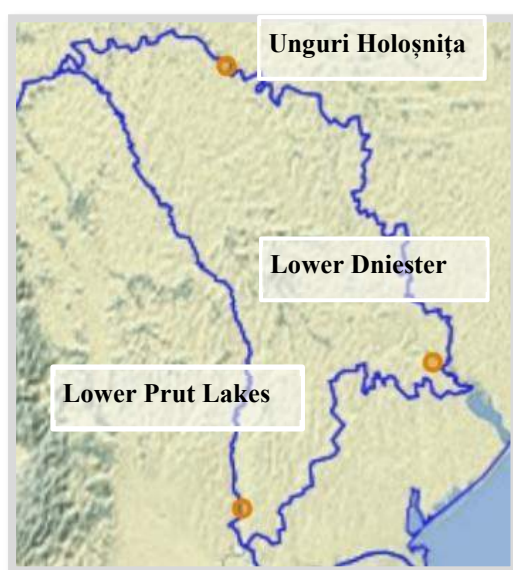


Figure 5-20 Ramsar Sites In MD

Source: Ramsar Sites Information Service, <https://rsis.ramsar.org/>

- **Biosphere Reserves**

In 2018, the International Coordination Council of the UNESCO Program "Man and the biosphere" (MAB) approved the application file for the "Prutul de Jos" Biosphere Reserve, which is not crossed or located in the vicinity of the baseline survey corridors of the Project.

Due to the geographical positioning and the presence of diverse habitats on the territory of MD, optimal conditions are ensured for a large number of 236 bird species, of which 12 species are globally threatened (4 species endangered, 8 species vulnerable), and 13 species are near threatened, according to the IUCN Red List³². A significant number of these species either nest in the country or are sedentary, being present throughout the year. To these are added species present during the migration periods of spring and autumn, when they briefly populate the territory of the country on their way to the North or South.

MD is crossed by 3 (three) migration segments: Sarmatic, Pontic and East-Elbic, which form the main east-European migration routes for wild birds. Two of the baseline survey corridors of the 400 kV T-Line routes partially cross the area where the most intense migration in the country is recorded – the southern part of MD (**Figure 5-21**). Also, in winter, the lakes on the territory of the country offer good feeding and resting conditions for many birds' species. Recent research shows that in this period of the year, the lakes in the country are home to about 23 species of birds, totalling over 40,000 individuals / year.

³² Data zone -Moldova, BirdLife International, <https://datazone.birdlife.org/country/moldova>

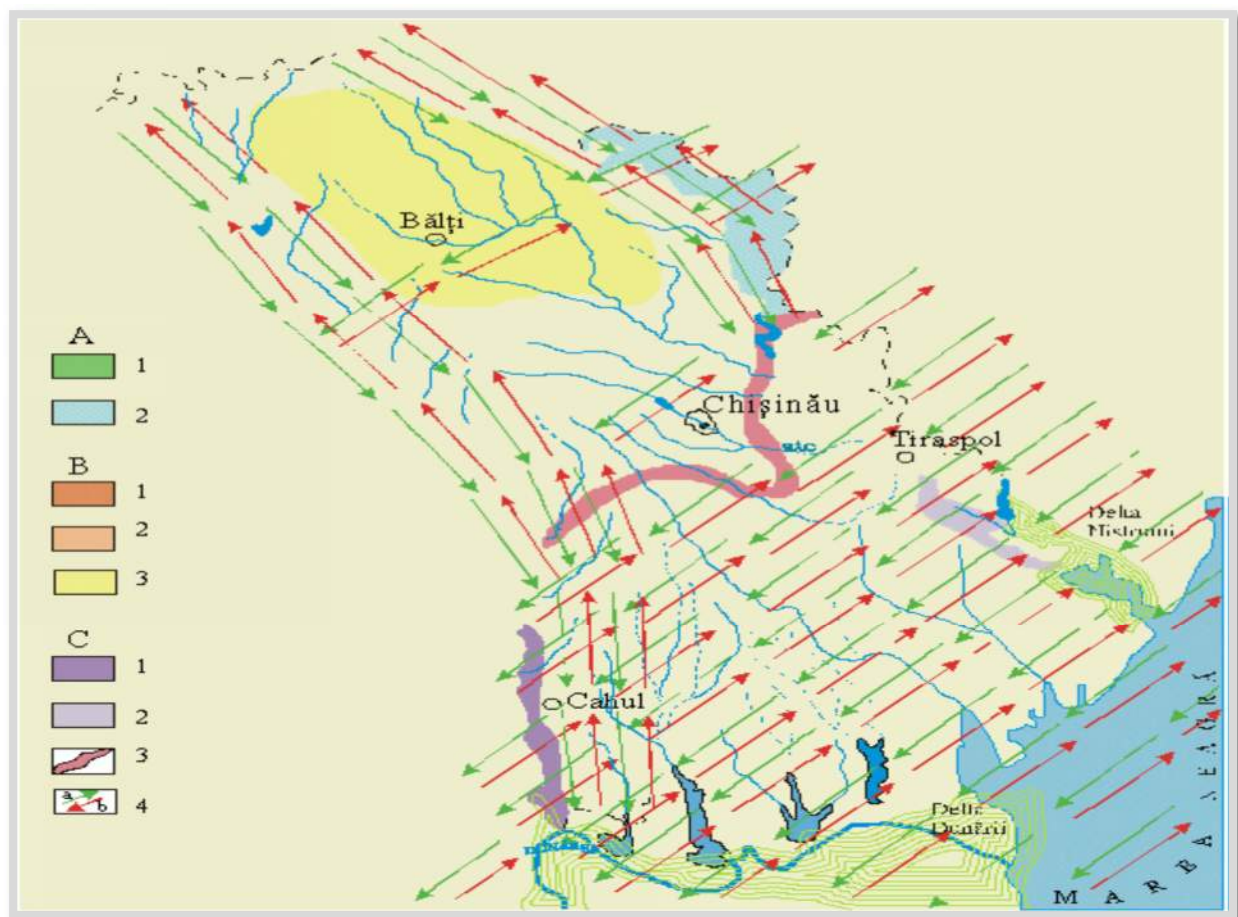


Figure 5-21 Bird Migration Routes in the Republic of Moldova³³

Source: <https://ucipe.gov.md/sites/default/files/2025-08/final-avian-risk-assesment-report-specific-for-operational-stage-of-the-400-kV-ohtl-eng.pdf>

• Forest Fund

In MD, the total surface of forest fund registered an upward trend in 2024, comparing with the previous years (2022: 467.8 ha; 2023: 467.9 ha; 2024: 492.2 ha; 2025: 485.8 ha)³⁴.

The majority of the national forest fund is owned by the state (87.2%), the rest being owned by territorial administrative units (12.2%) and private owners (0.6%). In addition to the forest fund, MD has 49.1 thousand ha of forest vegetation consisting of 29.8 thousand ha of protective forest

33 Legend: A - Steppe Forest area: zoogeographic forest sectors: 1 - Codrii, 2 - Râbnîța; B - Steppe area: zoogeographic sectors of steppe: 1 - Bugeac, 2 - Tiraspol, 3 - Balti; C - Interzonal zoogeographic sector: 1 - Lower Prut, 2 - Lower Nistru, 3 - Interzonal limit, 4 - migration of birds: a) autumn, b) spring

34 Statistical pocketbook, 2025 Edition, National Bureau of Statistics of Republic of Moldova, https://statistica.gov.md/files/files/publicatii_electronice/Moldova_in_cifre/2025/breviar_ro_2025.pdf

curtains (agricultural fields, roads, rivers and water basins, etc.) and 19.2 thousand ha - other types of forest vegetation³⁵.

The structure of forests disposed on a total area of 370.0 thousand ha includes mainly hard and soft deciduous (340.2 thousand ha and 27.0 thousand ha) and resinous (2,8 thousand ha).

5.3 Socio-Economic Environment in Romania and Republic of Moldova

The 4 (four) different suggested routes, for Strășeni/MD - Gutinaș/RO 400 kV High Voltage Transmission Line (T-line) Interconnector, are crossing both countries, Romania (RO) and Republic of Moldova (MD), passing through the following regions and counties/raions, as presented in **Table 5-6** and **Figure 5-22**:

Table 5-6 Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Countries, Regions and Counties/Raions Crossing

Republic of Moldova Development Region Centru	Romania Development Region (NUTS2): RO21 Nord-Est
Chișinău Municipality Leova Raion Hîncești Raion Nisporeni Raion Cimișlia Raion Ialoveni Raion Strășeni Raion	Bacău County (NUTS3/RO211) Iași County (NUTS3/RO213) Vaslui County (NUTS3/RO216)

Source: Consultant processed data from Google Earth, 2022

35 Forest resources, Moldsilva, <https://moldsilva.gov.md/pageview.php?l=ro&idc=180&t=/Fondul-forestier-national/Resursele-forestiere>

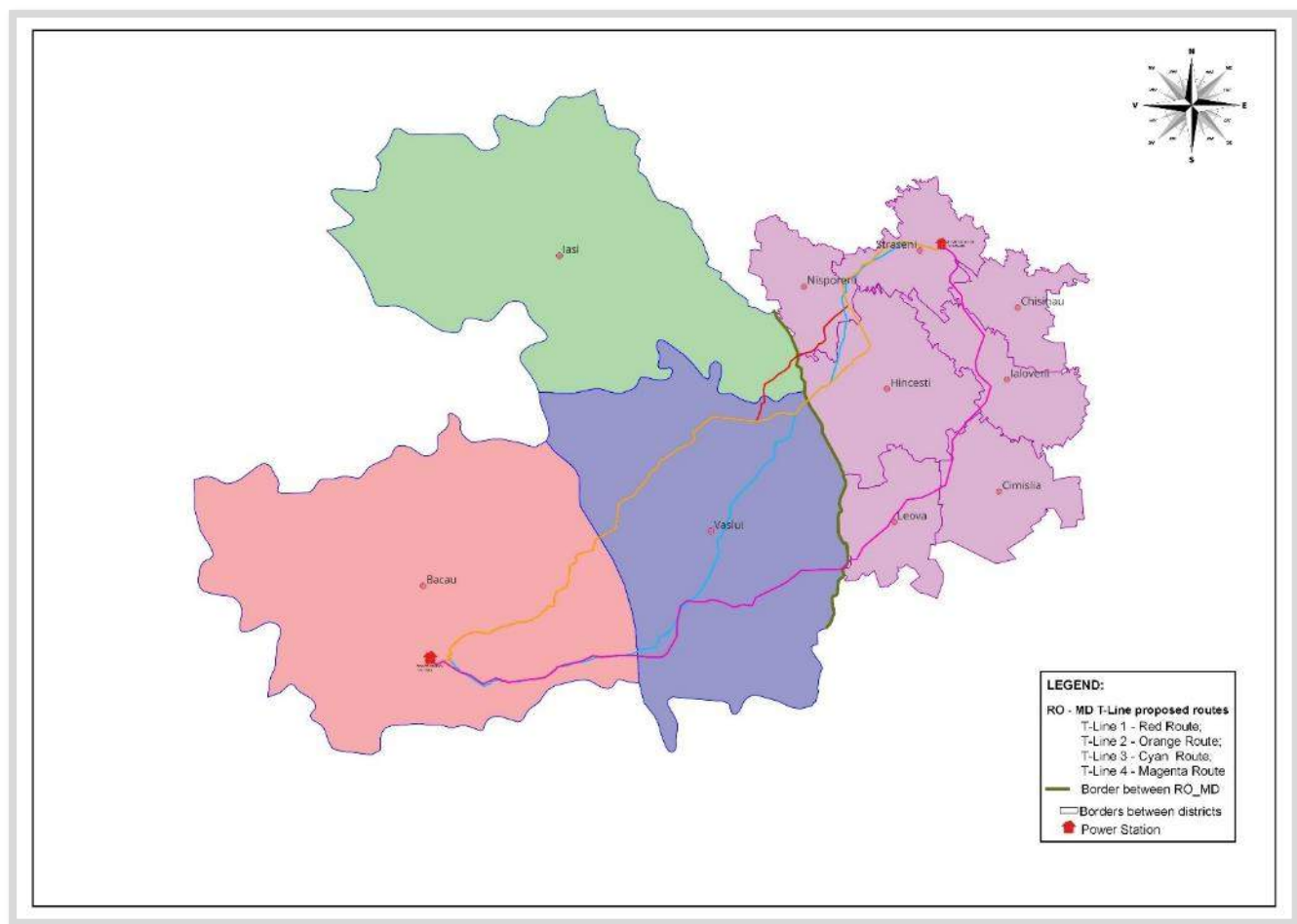


Figure 5-22 Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Administrative Map

Source: Consultant processed image based on Google Earth, 2022

The transmission lines have different lengths in each country, depending on the proposed options for the routes, with an average of 65-70% in Romania and 30-35% in Republic of Moldova, distances in each County/Raion varying depending on the routes (1-red, 2-orange, 3-blue and 4-magenta).

In the next chapter is presented a background for the socio-economic baseline situation in these areas.

Both a desk study and literature review were undertaken to collate available baseline data from published sources, together with onsite data gathering during the kick-off meeting in Chișinău, Republic of Moldova held between 10-14 June 2024 and the onsite mission – a field research (for an initial screening of the proposed T-Line routes RO-MD), organised in 24-27 September 2024, at the Project selected locations, including meetings with key stakeholders (**Figure 5-23**).

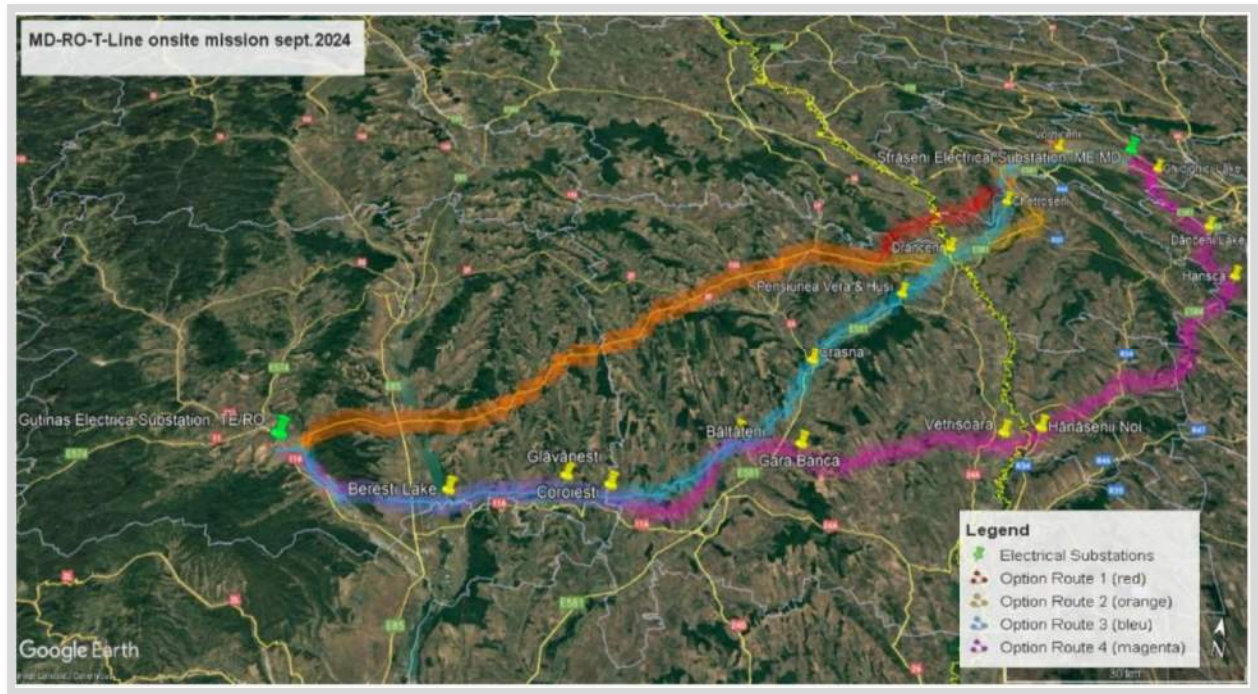


Figure 5-23 Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Onsite Scoping Mission
Source: Consultant processed image based on Google Earth, 2022

5.3.1 Project Sites' Location

For the baseline analysis of the socio-economic environment, a buffer zone was established, hereinafter referred to as “socio-economic baseline survey corridor”, of 500 m each side from the central axis of the power transmission line, all along the proposed 400 kV T-Line routes.

Based on satellite imagery and aerial photography (**Figure 5-24**) the areas inside the socio-economic baseline corridor are pre-dominantly farming land and some economic activities linked to farming, together with a number of small communities – villages neighbouring the proposed routes in both countries RO and MD.

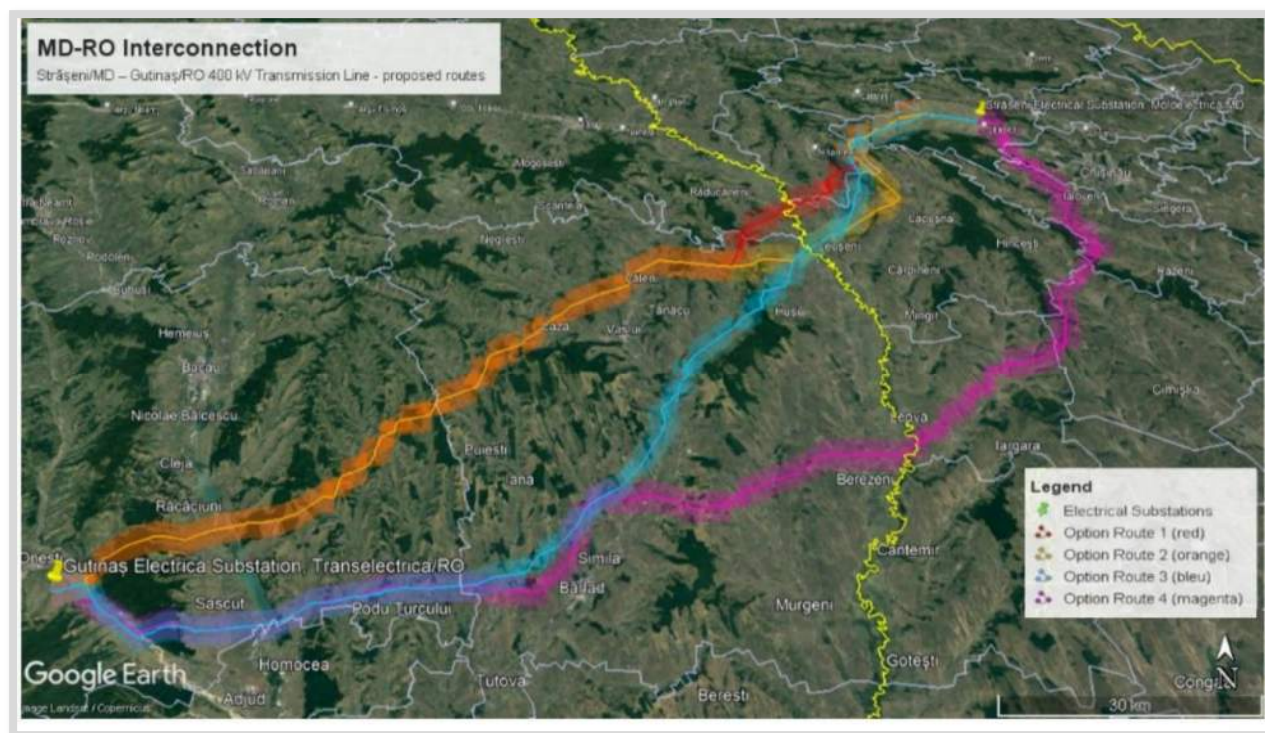


Figure 5-24 Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes

Source: Consultant processed image based on satellite imagery (Google Earth, 2022)

In the following table are presented the T-Lines approximative length in each country (RO and MD), for each proposed routes option (1-Red, 2-Orange, 3-Blue and 4-Magenta).

Table 5-7 Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Length Per Countries and Counties/Raions

T-Line		Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
County/Raion		Length (M)	%	Length (M)	%	Length (M)	%	Length (M)	%
Romania									
Bacău County		62,280	43%	62,280	46%	55,430	38%	55,025	42%
Iași County		13,845	9%	0	0%	0	0%	0	0%
Vaslui County		69,875	48%	71,720	54%	88,570	62%	74,975	58%
Republic of Moldova									
Chișinău Municipality		0	0%	0	0%	0	0%	6,260	6%
Ialoveni Raion		0	0%	0	0%	0	0%	31,837	29%
Cimișlia Raion		0	0%	0	0%	0	0%	22,740	21%
Strășeni Raion		26,520	47%	26,450	37%	25,750	39%	13,227	12%
Nisporeni Raion		26,430	46%	14,500	20%	14,100	21%	0	0%

T-Line		Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
County/Raion		Length (M)	%	Length (M)	%	Length (M)	%	Length (M)	%
Hîncești Raion		4,050	7%	31,050	43%	26,150	40%	2,500	2%
Leova Raion		0	0%	0	0%	0	0%	31,436	29%
Total length									
T-Line		203,000	100%	206,000	100%	210,000	100%	238,000	100%
RO		146,000	72%	134,000	65%	144,000	69%	130,000	55%
MD		57,000	28%	72,000	35%	66,000	31%	108,000	45%

Source: Consultant processed image based on satellite imagery (Google Earth, 2022)

The counties' surfaces most crossed by the proposed routes for the T-Line are the following:

- In Romania: Bacău and Vaslui counties
- In Republic of Moldova: Hîncești and Strășeni raions

In both countries land and households/dwellings ownership is mainly private, statistical data in this matter being presented in the following chapters.

All 4 (four) proposed routes, for Strășeni/MD - Gutinaș/RO 400 kV High Voltage Transmission Line (T-line) Interconnector, are passing over communities' administrative territory or closer to less than 50 m from several human settlements. Distances from the T-line route to neighbouring communities, mainly villages, inside the socio-economic baseline survey corridor (500 m each side from the central axis of the T-Line), are presented in the following tables for Romania (**Table 5-8**) and Republic of Moldova (**Table 5-9**).

Gutinaș ES (Electrical Substation) is located in the S-E part of Onești city, on the administrative territory of Buciumi UAT (Territorial Administrative Unit), with access road DC121 (communal road).

According to **Table 5-8**, in Romania, starting from Gutinaș ES (Electrical Substation) up to the countries' border with MD, in terms of most problematic passing-overs and very close (≤ 50 m) neighbouring to human settlements/cultural heritage sites are 24 locations, less highlighted route being T-Line Option 4 (magenta route), followed by T-Line Options 3, 2 and 1:

- Villages in
 - Bacău County: Rădeana (T-Lines Opt.1, 2, 3 and 4), Drăgușani, Orbeni, Marvila, Băcioiu, Arini and Popești (T-Lines Opt.1 and 2); Viișoara and Vrânceni (T-Line Opt.3); Valea Nacului (T-Lines opt.3 and 4); Sârbi (T-Line Opt.4);

- Vaslui County: Mărășești, Poieniști, Portari and Satu Nou (T-line Opt.1 and 2); Coroiști (T-Line opt.3); Drânceni (T-Lines Opt.3 and 4);
- Iași County: Cozmești, Gura Bohotin and Gorban (T-Line Opt.1).

Isolated settlements/buildings or industrial sites/archaeological sites: Gravel pit, near Popeni (T-Lines Opt. 3 and 4, Bacău County); isolated buildings near Rădești, isolated demolish buildings (DN24) and an accommodation facility, together with isolated settlements near Huși city (T-Line 3, Vaslui County).

Table 5-8 Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Distances to Neighboring Communities in RO, Inside the Socio-Economic Baseline Survey Corridor of 500 M (Each Side from the Central Axis of the T-Line)

T-Line	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
County / Raion	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (m)
Romania								
Bacău County	Rădeana v. (Ștefan cel Mare c.)	passing over < 25	Rădeana v. (Ștefan cel Mare c.)	passing over < 25	Rădeana v. (Ștefan cel Mare c.)	passing over < 25	Rădeana v. (Ștefan cel Mare c.)	passing over < 25
	Onești City (Water Treatment Plant)	< 150 m	Onești City (Water Treatment Plant)	< 150 m	Onești City (Water Treatment Plant)	< 150 m	Onești City (Water Treatment Plant)	< 150 m
	Drăgușani v. (Parava c.)	50 m - 150 m	Drăgușani v. (Parava c.)	50 m - 150 m	Viișoara v. (Ștefan cel Mare c.)	≤ 30 m	Ștefan cel Mare v. (Ștefan cel Mare c.)	≥ 270 m
	Orbeni v. (Orbeni c.)	< 50 m	Orbeni v. (Orbeni c.)	< 50 m	Florești v. (Căiuți c.)	≥ 70 m	Agricultural facility	< 300 m
	Pâncești v. (Pâncești c.)	< 150 m	Pâncești v. (Pâncești c.)	< 150 m	Vrânceni v. (Căiuți c.)	< 50 m	Helțiu v. (Căiuți c.)	≥ 150 m
	Marvila v. and Băcioiu v. (Corbasca c.)	< 50 m	Marvila v. and Băcioiu v. (Corbasca c.)	< 50 m	Căuți v. (Căuți c.)	> 300 m	Probably a Gravel pit, near Popeni v	< 50 m
	Vâlcele v. (Corbasca c.)	400 m – 500 m	Vâlcele v. (Corbasca c.)	400 m – 500 m	Probably a Gravel pit, near Popeni v.	passing over < 50 m	Valea Nacului v. (Sascut c.)	≤ 30 m
	Fundoaia v. (Huruiști c.)	< 300 m	Fundoaia v. (Huruiști c.)	< 300 m	Isolated settlements Boiștea v (Căuți c.)	≥ 70 m	Conțești v. (Sascut c.)	> 200 m
	Arini v. (Găiceana c.)	passing over	Arini v. (Găiceana c.)	passing over	Valea Nacului v. (Sascut c.)	≤ 30 m	Berești Dam (HPP)	≤ 400 m

T-Line	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
County / Raion	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (m)
		< 50 m		< 50 m			Leisure area	
	Găiceana v. (Găiceana c.)	≥ 150 m	Găiceana v. (Găiceana c.)	≥ 150 m	Conțești v. (Sascut c.)	> 200 m	Monastery in Perchiu v. (Huruiesti c.)	≤ 170 m
	Popești v. (Găiceana c.)	< 60 m	Popești v. (Găiceana c.)	< 60 m	Berești Dam (HPP) Leisure area	≤ 400 m	Negulești v. (Dealul Morii c.) and Sârbi v. (Podu Turcului c.)	> 115 m
	Dădești v. (Vultureni c.)	≥ 300 m	Dădești v. (Vultureni c.)	≥ 300 m	Monastery in Perchiu v. (Huruiesti c.)	≤ 170 m	Sârbi v. (Podu Turcului c.)	≤ 50 m
	Țigănești v. (Vultureni c.)	≥ 300 m	Țigănești v. (Vultureni c.)	≥ 300 m	Negulești v. (Dealul Morii c.) and Sârbi v. (Podu Turcului c.)	> 250 m	Glăvănești v. and Podu Turcului v.	> 200 m
	Vultureni v. and Bosia v. (Vultureni c.)	≥ 200 m	Vultureni v. and Bosia v. (Vultureni c.)	≥ 200 m	Glăvănești v. and Podu Turcului v.	> 200 m	-	-
	Văleni v. (Stănișești c.)	≥ 300 m	Văleni v. (Stănișești c.)	≥ 300 m	-	-	-	-
	Taula v. (Oncești c.)	≥ 200 m	Taula v. (Oncești c.)	≥ 200 m	-	-	-	-
	Slobozia v. (Stănișești c.)	≥ 200 m	Slobozia v. (Stănișești c.)	≥ 200 m	-	-	-	-
	Bărcana v. (Răchitoasa c.)	≥ 370 m	Bărcana v. (Răchitoasa c.)	≥ 370 m	-	-	-	-
Vaslui County	Mărășești v. (Voinești c.)	< 40 m	Mărășești v. (Voinești c.)	< 40 m	Coroiești v. (Coroiești c.)	≥ 50 m	Crâng v. (Ciocani c.)	≥ 100 m
	Gârdești v. (Voinești c.)	≥ 300 m	Gârdești v. (Voinești c.)	≥ 300 m	Podu Petriș v. (Ciocani c.)	≥ 100 m	Suseni v. (Băcani c.)	> 350 m
	Drăxeni v. (Gherghești c.)	≥ 170 m	Drăxeni v. (Gherghești c.)	≥ 170 m	Băltățeni v. (Băcani c.)	≥ 180 m	Horoiața v. (Bogdănești c.)	≥ 190 m
	Frasinu v. (Poieniști c.)	≥ 100 m	Frasinu v. (Poieniști c.)	≥ 100 m	Isolated buildings near Rădești v. (Costești c.)	50 m – 200 m	Grain Silo (Sălcioara v.)	320 m
	Poieniști v. (Poieniști c.)	passing over ≥ 200 m	Poieniști v. (Poieniști c.)	passing over ≥ 200 m	Isolated settlements Costești v. (Costești c.)	> 270 m	1 Decembrie v. (Banca c.)	≥ 210 m

T-Line	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
County / Raion	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (m)
	Laza v. and Râșnița v. (Laza c.)	≥ 200 m	Laza v. and Râșnița v. (Laza c.)	≥ 200 m	Crasna v. (Albești c.)	≥ 180 m	Stoișești and Țifu v. (Banca c.)	≥ 200-250 m
	Săuca v. (Laza c.)	> 300 m	Săuca v. (Laza c.)	> 300 m	Isolated demolish buildings (DN24)	passing over < 30 m	Dodești v. (Dodești c.)	> 250 m
	Bălteni v. (Bălteni c.)	≥ 400 m	Bălteni v. (Bălteni c.)	≥ 400 m	Industrial/Agricultural facility near Pâhna v.	> 320 m	Ștuhuleți v. and Rânceni v. (Berezeni c.)	> 200 – 300 m
	Mărășeni v. (Ștefan cel Mare c.)	≥ 250 m	Mărășeni v. (Ștefan cel Mare c.)	≥ 250 m	Târzii v. (Oltenești c.)	≥ 70 m	Vetrișoara v. (Vetrișoara c.)	> 130 m
	Portari v. (Zapodeni c.)	passing over < 50 m	Portari v. (Zapodeni c.)	passing over < 50 m	Accommodation facility and isolated settlements (Huși city)	passing over ≤ 30 m	-	-
	Văleni v. (Văleni c.)	> 300 m	Văleni v. (Văleni c.)	> 300 m	Isolated agricultural facility	≤ 170 m	-	-
	Satu Nou v. (Solești c.)	passing over < 50 m	Satu Nou v. (Solești c.)	passing over < 50 m	Duda v. (Duda-Epureni c.)	≥ 180 m	-	-
	Solești Dam		Solești Dam					
	Popești v. (Miclești c.)	≥ 250 m	Popești v. (Miclești c.)	≥ 250 m	-	-	-	-
	Boțești v. (Boțești c.)	≤ 100 m	Boțești v. (Boțești c.)	≤ 100 m	-	-	-	-
	Armășeni v. (Bunești-Averești c.)	> 200 m	Isolated settlement	< 70 m	-	-	-	-
	Bunești v. (Bunești-Averești c.)	> 300 m	Averești and Plopi v. (Bunești-Averești c.)	≥ 300 m	-	-	-	-
	-	-	Fundătura v. (Arsura c.)	≥ 170 m	-	-	-	-
	-	-	Drânceni v. and c.	passing over ≥ 50 m	Drânceni v. and c.	passing over ≥ 50 m	-	-
Iași County	Podolenii de Sus v. (Cozmești c.)	> 380 m	-	-	-	-	-	-

T-Line	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
County / Raion	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (m)
	Cozmești v. (Cozmești c.)	passing over < 150	-	-	-	-	-	-
	Gura Bohotin v. and Gorban v. (Gorban c.)	< 20	-	-	-	-	-	-

Source: Consultant processed image based on satellite imagery (Google Earth, 2022)

Strășeni ES (Electrical Substation) is located in the N-W part of Strășeni City and Chișinău Municipality, on the administrative territory of Strășeni Raion, with access road L442 (communal road).

According to **Table 5-11**, in Republic of Moldova, starting from Strășeni ES (Electrical Substation) up to the countries' border with RO, in terms of most problematic passing-overs and very close (≤ 50 m) neighbouring human settlements/cultural heritage sites, there are 12 locations, less highlighted route being T-Line Option 3 (blue route), followed by T-Line Options 4, 2 and 1:

- Villages in
 - Strășeni Raion: Strășeni (T-Line opt.4), Lozova, Vorniceni (T-Lines opt.1, 2 and 3);
 - Nisporeni Raion: Cristești (T-Lines opt.1 and 2); Bolțun (T-Line opt.2); Heleșteni or Călimănești (T-Line opt.1);
 - Hîncești Raion: Chetroșeni (T-Line opt.3);
- Isolated settlements/buildings/archaeological sites: near Ghidighici Lake (T-Line opt.4, Strășeni R.); near Bălăurești v. (T-Line opt.1, Nisporeni R.); near Boghicieni v. (T-Line opt.2, Hîncești R.); near Ialoveni city and near Costești Lake (T-Line opt.4, Ialoveni R.).

Table 5-9 Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Distances to Neighboring Communities in MD, Inside the Socio-Economic Baseline Survey Corridor of 500 M (Each Side from the Central Axis of the T-Line)

T-Line	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
County / Raion	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (M)
Republic of Moldova								
Strășeni Raion	Strășeni Electrical Substation Several archaeological sites and a group of buildings	within a radius < 500 m	Strășeni Electrical Substation Several archaeological sites and a group of buildings	within a radius < 500 m	Strășeni Electrical Substation Several archaeological sites and a group of buildings	within a radius < 500 m	Strășeni v.	passing over ≥ 50 m
	Bucovăț v.	> 200 m	Bucovăț v.	> 200 m	Bucovăț v.	> 400 m	Cojușna v.	≥ 120 m
	Leisure area (pond) near an archaeological site Vorniceni Tuberculosis H.	100 m - 300 m	Leisure area (pond) near an archaeological site Vorniceni Tuberculosis H.	100 m - 300 m	Several archaeological sites	300 m – 400 m	2 x isolated settlements near Ghidighici Lake	≥ 50 m
	Isolated buildings near R44	< 150 m	Lozova v.	≥ 50 m	Vorniceni v.	passing over ≥ 30 m	Roșcani v.	> 400 m
	Lozova v.	≥ 50 m	Huzun v.	> 180 m	Lozova v.	≥ 50 m	-	-
	Huzun v.	> 180 m	-	-	Huzun v.	> 250 m	-	-
Nisporeni Raion	Bursuc v.	> 100 m	Bursuc v.	> 100 m	Bursuc v.	> 100 m	-	-
	Iurceni v.	> 150 m	Iurceni v.	> 150 m	Mîrzoaia v.	> 300 m	-	-
	Cristești v.	≥ 50 m	Cristești v.	≥ 50 m	-	-	-	-
	Mîrzoaia v.	> 250 m	Bolțun v.	passing over < 10 m	-	-	-	-
	Șișcani v.	> 380 m	Isolated buildings	< 100 m	-	-	-	-
	Heleșteni v. or Călimănești v.	passing over < 50 m	-	-	-	-	-	-
	Bălăurești v. Archaeological site	≥ 150 m ≤ 50 m	-	-	-	-	-	-
	-	-	Cornești v.	> 250 m	Chetroșeni v.	< 30 m	-	-

T-Line	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
County / Raion	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (M)	Village / Commune	Distance (M)
Hîncești Raion	-	-	Isolated buildings near Boghicieni v.	< 50 m	Mirești v.	> 230 m	-	-
	-	-	Bujor v.	> 230 m	Isolated buildings	< 90 m	-	-
	-	-	Ivanovca v	> 100 m	Ivanovca v	> 100 m	-	-
	-	-	Leușeni v. and several archaeological sites	> 100 m	Leușeni v. and several archaeological sites	> 100 m	-	-
	-	-	Sărăteni v.	> 200 m	Sărăteni v.	> 200 m	-	-
Ialoveni Raion							Ialoveni city and 2 x isolated residential areas	passing over ≥ 50 m
							Agricultural facility near Costești Lake	passing over
							Hansca v.	≥ 200 m
	-	-	-	-	-	-	Isolated buildings in Molești v.	≥ 215 m
Cimișlia Raion							Albina v.	> 400 m
	-	-	-	-	-	-	Artimonovca v.	> 200 m
Leova Raion							Vozneseni v.	> 400 m
							Troița v.	> 150 m
	-	-	-	-	-	-	Frumușica v.	> 200 m

Source: Consultant processed image based on satellite imagery (Google Earth, 2022)

In terms of project site's location interaction with /passing over local communities or cultural heritage sites, from all 4 (four) T-Lines options, the less problematic routes in both countries – Romania and Republic of Moldova – are T-Line Options 3 and 4, followed by 1 and 2.

After performing the second in-depth MCA, based on digital maps, and the field scoping mission several sensitive areas in terms of potential social impacts have emerged (**Table 5-10**) along T-Line routes Alternates 1 and 2, related to:

- human settlements in the proximity or inside the buffer zone (left-right from the central axis of the T-Line route) for the socio-economic risk analysis corridor of < 100 m, narrowed from the survey corridor of < 500 m;
- type of land crossed by each T-Line alternative routes and expropriation needs, as percentage of the total T-Line length.

Table 5-10 Strășeni/MD - Gutinaș/RO 400 kV T-Line Proposed Routes – Distances to Neighboring Communities in RO, Inside the Socio-Economic Risk Analysis Corridor of 100 m (Each Side from the Central Axis of the T-Line)

T-Line	Alternate 1		Alternate 2		Gross Estimates for Expropriation Needs*; Land Type
Country/Raion	Village/Commune	Distance (M)	Village/Commune	Distance (M)	
Republic of Moldova					
Nisporeni	Cristești village	50-80	-	-	78% - 85%; over 73% crop land Land plots crossed: Alt.1 (97% private, 3% public); Alt.2 (98% private, 2% public)
Ialoveni	-	-	Ialoveni city	≤ 50	
Chișinău Mun.	-	-	residential area, S-E of Dumbrava v.	at the boundary	
Strășeni	Lozova village	≤ 60 at the boundary	isolated settlement N-E of Ghidighici Lake	cross-over	
Strășeni	isolated settlement, near Strășeni ES	≤ 10	periphery of Strășeni city, near Strășeni ES	≤ 30	
Romania					
Bacău	Borzești neighbourhood, Onești city	cross-over	-	-	95%; over 70% crop land The cadastral system is under digitalisation
Bacău	Valea Nacului v., Sascut c.	at the boundary	Valea Nacului v., Sascut c.	at the boundary	
Bacău	Sârbi v., Podu Turcului c.	≤ 50	Sârbi v., Podu Turcului c.	≤ 40	
Vaslui	Coroiești v. and c.	≤ 50	Coroiești v. and c.	≤ 50	
Vaslui	-	-	Vetrișoaia v. and c.	≤ 70	

*- % of the total T-Line length; Source: Consultant processed data (for additional details see ESIA Scoping Report)

In terms of T-Line routes - Alternate 1 and 2 - interaction with or passing over local communities / human settlements, for both countries, Alternate 1 is recommended with the exception of the proximity to the human settlement/agricultural farm near ES Strășeni (south-west) – in Republic of Moldova, Strășeni Raion, and Borzești neighbourhood, Onești city cross-over near ES Gutinaș – in Romania, Bacău County.

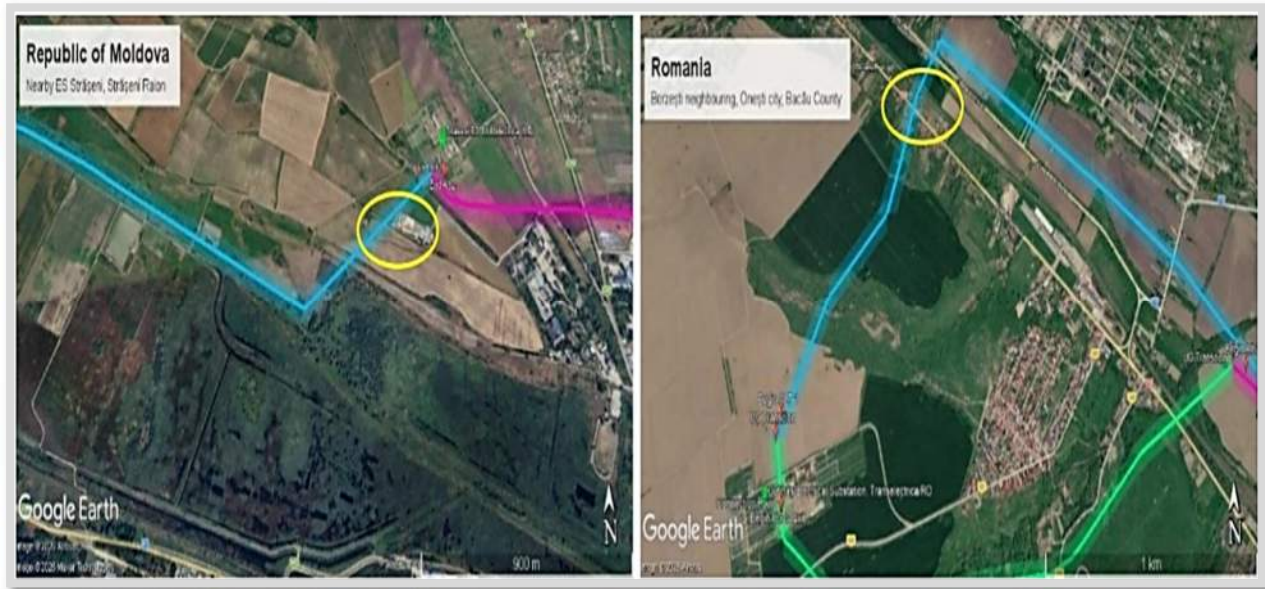


Figure 5-25 T-Line Route - Alternate 1 - Most Problematic Proximities or Crossing-Over
Source: Consultant processed image based on satellite imagery (Google Earth, 2022)

5.3.2 Demographics And Living Standards

Romania and the Republic of Moldova have had an extremely close relationship since Moldova's declaration of independence in 1991, due to their shared ethnicity, heritage, and religion. Most of the territory that today forms the Republic of Moldova was part of Romania during the interwar period.

Romania maintains close political and economic ties with the Republic of Moldova and supports it logistically, more substantially than ever, given the current geopolitical context in the region, exacerbated by the Russia-Ukraine conflict.

Both countries face a major challenge that they must manage, arising from the demographic transition process that began in the 1990s and has become increasingly aggressive, emphasizing: the overall demographic decline, the phenomenon of shrinking local communities, with a population decrease of approximately 16% (RO, official census 2021 vs. 1992)³⁶ and 44% (MD, official census 2024 vs. 1989)³⁷ compared to the peak in the '90s.

36 <https://www.recensamantromania.ro/rezultate-rpl-2021/rezultate-definitive/>

37 https://statistica.gov.md/ro/statistic_indicator_details/60

The main causes of demographic decline are the increase in migration to Western Europe, the low birth rate, and an aging population. In the following tables MD and RO national/regional demographics are presented related to Counties, RO / Raions, MD crossed by all 4 proposed T-Lines routes.

Table 5-11 presents the evolution of the population structure by gender in the two countries – at the national, and regional levels.

Table 5-11 Population Usually Resident by Gender, RO And MD (Inhabitants)

Statistical Indicator	National / Raions & Counties	2011*	2014*	2021*	2022	2023**	2024
Total Population (Inhabitants), Of Which: Male Female	RO national ↓	20,121,641 9,788,577 10,333,064	-	19,053,815 9,245,540 9,808,275	19,052,694 9,245,067 9,807,627	19,063,662 9,262,519 9,801,143	19,055,961 9,267,249 9,788,712
	Bacău County ↓	616,168 304,000 312,168	-	601,387 295,234 306,153	598,600 293,809 304,791	596,695 293,157 303,538	593,989 291,894 302,095
	Iași County ↑	772,348 381,844 390,504	-	760,774 374,325 386,449	769,943 378,676 391,267	776,414 382,091 394,323	779,624 383,713 395,911
	Vaslui County ↓	395,499 197,704 197,795	-	374,700 187,891 186,809	372,314 187,038 185,276	370,512 186,693 183,819	367,905 185,561 182,344
	MD national ↓	-	2,804,801 1,352,099 1,452,702	2,626,585 1,253,197 1,373,388	2,565,030 1,218,166 1,346,864	2,512,758 1,187,596 1,325,162	2,409,207 1,137,343 1,271,864
	Chișinău Mun. ↑	-	469,402 220,971 248,431	669,758 308,061 361,697	671,667 308,238 363,429	672,967 308,186 364,781	720,128 333,976 386,152
	Cimișlia Raion ↓	-	49,299 24,327 24,972	34,546 16,445 18,101	33,398 15,715 17,683	32,600 15,159 17,441	30,986 15,146 15,840
	Hîncești Raion ↓	-	103,784 50,859 52,925	77,160 37,572 39,588	74,956 36,256 38,700	73,184 35,173 38,011	69,462 33,734 35,728
	Ialoveni Raion ↓	-	93,154 45,779 47,375	75,916 36,611 39,305	74,513 35,761 38,752	73,120 34,878 38,242	74,458 36,177 38,281
	Leova Raion ↓	-	44,702 22,233 22,469	35,275 17,683 17,592	34,217 17,065 17,152	33,477 16,595 16,882	28,835 14,298 14,537

Statistical Indicator	National / Raions & Counties	2011*	2014*	2021*	2022	2023**	2024
	Nisporeni Raion ↓	-	53,154	40,820	39,321	38,110	36,413
			26,625	20,369	19,448	18,693	17,779
			26,529	20,451	19,873	19,417	18,634
	Strășeni Raion ↓	-	82,675	67,046	65,301	63,806	61,362
			40,429	32,514	31,548	30,667	31,602
			42,246	34,532	33,753	33,139	29,760

*- National official censuses MD (2014, 2024), RO (2011, 2021); **) Provisional data

Source: National Official Census; RO and MD – National Statistical Institutes and Statistical Yearbooks

It can be observed that the declining of the population continues at national level since the last official census, with a decrease of 14% for MD (2014-2024), and for RO by 5% (2011-2024), a trend that is also maintained at the regional level in both countries, with only two exception for Iași County, RO where there is a small increase and Chișinău Municipality, MD with a constant increase. Regarding the gender proportion is balanced, females being slightly dominant in both countries, in RO - 49% male vs. 51% female, and in MD - 47% male ↓ vs. 53% female↑ which remains stable for 2023-2024.

From an ethnic perspective, according to the latest official census, the dominant ethnicity at national level in each country is for RO: Romanian, 78% vs. 83% (RO, official census 2021 vs. 2011), and in MD: Moldovan, with over 76.7% (MD, official census 2024), with percentages exceeding 80% in the analysed regions (Raions/Counties).

In the following table the statistics are related to the age dependency ratio of the resident population. In RO the ratio was calculated by the Consultant considering this age groups: economically dependent (0y-15y, +65y) vs. working-age population (15y-65y).

Table 5-12 Population Usually Resident by Age - Economically Dependent Vs. In Working-Age, RO and MD

Statistical Indicator	National / Raions & Counties	2011*	2014*	2021*	2022	2023**	2024
Total Population Economically Dependent (inh.) In Working Age (inh.) Age Dependency Ratio (%)	RO national	6,437,390	-	6,800,282	6,820,946	6,857,896	6,846,473
		13,684,251		12,253,533	12,231,748	12,205,766	12,209,488
		47%		55%	56%	56%	56% →
	Bacău County	212,769	-	219,329	219,465	219,678	218460
		403,399		382,058	379,135	377,017	375529
		53%		57%	58%	58%	58% →
	Iași County	251,666	-	282,681	284,543	286,612	285846
		520,682		478,093	485,400	489,802	493778
		48%		59%	59%	59%	58% ↓

Statistical Indicator	National / Raions & Counties	2011*	2014*	2021*	2022	2023**	2024
	Vaslui County	145,956 249,543 58%	-	140,697 234,003 60%	140,569 231,745 61%	140,000 230,512 61%	138098 229807 60% ↓
	MD national	-	1,034,397 1,770,404 58% ↑	1,055,102 1,542,005 68% ↑	1,060,654 1,543,159 69% ↑	1,029,293 1,483,465 69%	898,074 1,511,133 59% ↓
	Chişinău Mun.	-	156,972 312,430 50%	256,327 413,431 62%	254,600 412,067 62%	252,817 421,150 60%	246643 473485 52% ↓
	Cimişlia Raion	-	17,130 32,169 53%	15,054 19,492 77%	15,259 18,624 82%	14,935 17,665 85%	12,478 18,508 67% ↓
	Hînceşti Raion	-	38,275 65,509 58%	33,386 43,774 76%	33,253 42,451 78%	32,470 40,714 80%	27,597 41,865 66% ↓
	Ialoveni Raion	-	32,695 60,459 54%	31,783 44,133 72%	31,696 43,673 73%	31,012 42,108 74%	27,739 46,719 59% ↓
	Leova Raion	-	16,274 28,428 57%	14,675 20,600 71%	14,663 19,938 74%	14,270 19,207 74%	11,220 17,615 64% ↓
	Nisporeni Raion	-	20,167 32,987 61%	17,638 23,182 76%	17,418 22,501 77%	16,886 21,224 80%	14,431 21,982 66% ↓
	Străşeni Raion	-	30,056 52,619 57%	28,629 38,417 75%	28,617 37,379 77%	27,958 35,848 78%	23,793 37,569 63% ↓

*- National official censuses MD (2014, 2024), RO (2011, 2021); **) Provisional data

Source: National Official Census; RO and MD – National Statistical Institutes and Statistical Yearbooks, including processed data by the consultant

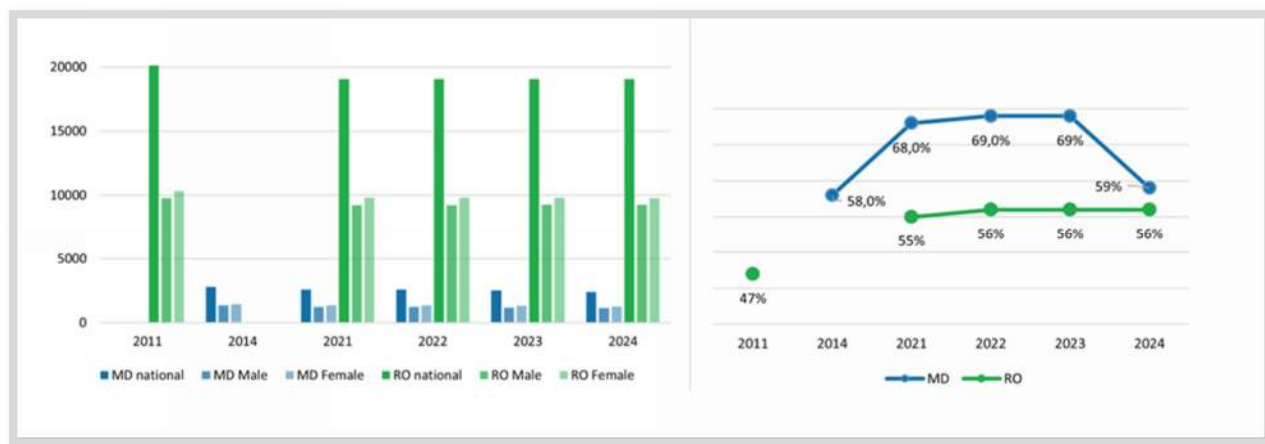


Figure 5-26 Resident Population By Gender (TH inh.); Population Dependency Rate (%)

Source: Consultant processed data from Tables 4-11 and 4-12 above

In **Table 5-12** and the graph above, after a significant increase of 16% in the gap between the dependent population and the working-age population in RO (2024 vs. 2011) and in MD only 2% (2024 vs. 2014). A high dependency rate indicate that more resources (like taxes, healthcare, and pensions) are needed to support the dependent population, while fewer people are contributing to the economy through work, thus placing greater pressure on the economy and social services.

As mentioned in **Chapter 5.3.1 Project sites' location**, in both countries land and households/dwellings ownership is mainly private (93.0% - 99.7%), main statistical data from the last finalised official census being presented in the next table.

Table 5-13 Dwellings by Ownership, During the Last Official Census in RO and MD

Statistical Indicator	National / Raions & Counties	Individual House			Apartment		
		2021*	2014*	%	2021*	2014*	%
Total Dwellings (Number), Of Which:	RO National	5,958,046	-	98%	3,708,952	-	93.2%
		5,837,523			3,458,581		
		43,025			88,519		
		77,498			161,852		
Private	Bacău County	191,218	-	98.7%	97,903	-	91.3%
		188,651			89,427		
		1,025			3,641		
		1,542			4,835		
State Owned	Iași County	238,453	-	97.2%	159,723	-	94.7%
		231,739			151,249		
		1,362			2,539		
		5,352			5,935		
Others	Vaslui County	135,191	-	98.8%	47,844	-	93.0%

Statistical Indicator	National / Raions & Counties	Individual House			Apartment		
		2021*	2014*	%	2021*	2014*	%
		133,511 859 821			44,498 2,962 384		
	MD National	-	897,027 892,855 1,503 2,669	99.5%	-	339,548 330,635 7,513 1,400	97.4%
	Chişinău Mun.	-	49,976 49,367 433 176	98.8%	-	196,187 191,189 4,186 812	97.5%
	Cimişlia Raion	-	19,452 19,348 18 86	99.5%	-	1,702 1,664 34 4	97.8%
	Hînceşti Raion	-	37,693 37,463 66 164	99.4%	-	2,745 2,644 89 12	96.3%
	Ialoveni Raion	-	32,064 31,980 15 69	99.7%	-	2,742 2,682 57 3	97.8%
	Leova Raion	-	15,547 15,412 52 83	99.1%	-	2,330 2,167 153 10	93.0%
	Nisporeni Raion	-	20,777 20,661 8 108	99.4%	-	1,279 1,275 1 3	99.7%
	Străşeni Raion	-	26,508 26,387 58 63	99.5%	-	4,041 3,954 77 10	97.8%

*) Last National official censuses MD (2014), RO (2021);
Source: National Official Census final results RO and MD

In the last table are presented 3 of the national key indicators describing the living standards, in both countries, and highlighting the trends in terms of:

1. GDP per capita in MD ↑ and RO ↑
2. total registered unemployment in MD ↑ and RO →, with focus on youth (15-24) y
unemployment in MD ↑ and RO ↓
3. poverty rate in MD ↓ and RO ↓

Table 5-14 National Key Statistical Indicators, RO and MD

Statistical Indicator	Country	2011*	2014*	2021*	2022	2023**	2024
GDP per capita, PPP (current international \$)	RO	18,804	20,633	37,534	41,979	45,981	49,076
	MD	6,833	8,643	15,682	16,453	17,747	18,615
GDP per capita growth (annual %)	RO	5.0	4.5	6.5	4.5	2.1	1.0
	MD	5.9	5.1	15.7	-2.9	2.9	2.4
Registered unemployment, total (% of total labour force) (modelled ILO estimate)	RO	7.2	6.8	5.6	5.6	5.6	5.4
	MD	2.7	1.5	0.8	0.9	1.6	1.4
Registered unemployment, youth total (% of total labour force ages 15-24) (modelled ILO estimate)	RO	23.8	24.0	21.0	22.6	21.3	23.6
	MD	4.9	2.3	1.8	2.8	4.2	4.5
Poverty headcount ratio at \$4.20 a day (2021 PPP) (% of population)	RO	13	14.1	3	2.8	1.3	NA
	MD	2.7	0.7	0.3	0.3	0.8	NA

Source: DataBank, The World Bank Group, 2024 <https://data.worldbank.org/>

Romania, despite a robust recovery following the pandemic, faces volatile growth and persistent social policy issues. A substantial portion of its population remains at risk of poverty and social exclusion, particularly in rural areas, compounded by declining demographics and labour shortages due to outward migration.

According to ILO (International Labour Organisation) Moldova has made notable progress in development, yet it confronts with significant economic and social hurdles, such as high informal employment rates and a largely jobless growth pattern. The ongoing conflict in Ukraine has prompted Moldova to intensify its efforts to sustain positive socio-economic trends amidst these challenges.

Both countries must navigate these complexities to foster sustainable growth and improve living conditions for their citizens.

5.3.3 Public Utilities Infrastructure

In both countries RO and MD, much remains to be done to rehabilitate, modernise and properly interconnect public infrastructures, especially in the field of road transport.

In Romania, public infrastructures/connectivity have seen significant improvements in recent years, with an emphasis on developing the network of motorways and expressways despite several bottlenecks, electricity and natural gas and rehabilitating the water-sewage systems. Recently a significant support is targeting the modernisation and renewal of railway infrastructure via the RRF. Romania is also working closely with the Republic of Moldova to improve cross-border connectivity, considering the interconnection of road, electricity and natural gas infrastructures a strategic priority.

Moldova's priorities for cooperation with European Union in the field of transport are broadly aimed at creating the necessary conditions for integration into the EU's internal market in this area (priority being given to the aviation and road transport services sector), including by supporting its development and modernisation. Two significant projects are the construction of the Iași-Ungheni-Chișinău-Odessa Highway, which will facilitate connectivity with the European Union and stimulate regional economic development, and the bridge over the Prut at Ungheni, part of the Unirii Highway (A8).

Based on desk study & review of available baseline data from published sources the analyses performed in the areas of interest along the proposed T-Line routes, summarised the following:

Table 5-15 Public Infrastructures Crossed by All 4 T-Line Proposed Routes, RO and MD

Romania	Republic of Moldova
overhead transmission lines 110 kV, 400 kV, 750 kV	overhead transmission lines 110 kV, 330 kV
roads: Bacău 19; Vaslui 33; Iași 4	roads: Strășeni 10; Nisporeni 4; Ialoveni 4; Cimișlia 1; Leova 2
railways: 3	railways: 1
1 main natural gas pipeline (NT Onești - NT Munteni - NT Șendreni) and 2 connections (1. SRM Bacău; 2. NT Munteni - SRM Vaslui - NT Lețcani) NT – technological node; SRM - Adjustment-measurement stations	2 connections to main natural gas pipelines (1. SP Hîbești - SP Gura Galbenă - SP Cimișlia; 2. SP Ungheni - SP Nisporeni - SP Strășeni -SP Peresecina). SP - delivery stations

Source: Consultant processed data from public sources (for additional details see ESIA Scoping Report)

The roads and railways infrastructure crossed by all 4 T-Line routes proposed is presented in the table below.

Table 5-16 Roads and Railway Networks Crossed By All 4 T-Line Proposed Routes, RO and MD

Country/County/Raion	Option 1 – Red Route	Option 2 – Orange Route	Option 3 – Blue Route	Option 4 – Magenta Route
RO – Bacău County	DC112, DJ119D, E85, DJ252C, DC96, DC97, DC68, DJ252, DC66, DC65, DJ241A, DJ243B, DC54, DJ241	DC112, DJ119D, E85, DJ252C, DC96, DC97, DC68, DJ252, DC66, DC65, DJ241A, DJ243B, DC54, DJ241	DC114, DJ119A, DN2/E85, DJ119A, DJ252C, DJ252, DJ241A, DJ206A, DJ241	DC114, DJ119A, DN2/E85, DJ119A, DJ252C, DJ252, DJ241A
	main railway network 500 and secondary railway network 501			
RO – Vaslui County	DJ243, DC93A, DC146, DJ245B, DJ245M, DN2F, DJ105, DJ105A, DJ207E, DJ247, DN15D, DC17, DJ246A, DC3A, DN24, DC13, DJ244E, DJ244D, DC68, DJ244G, DN28	DJ243, DC93A, DC146, DJ245B, DJ245M, DN2F, DJ105, DJ105A, DJ207E, DJ247, DN15D, DC17, DJ246A, DC3A, DN24, DC13, DJ244E, DC26, DJ244D, DJ284, DN28	DJ243E, DJ243A, DJ243B, DJ243, DC84, DJ245, DC29, DC31B, DJ245L, DN24 (E581), DC30, DJ244K, DJ244E, DJ244D, DN28	DJ243A, DJ243, DJ243D, DJ245, DC84, DJ245C, DJ245D, DN24 (E581), DC148, DJ244, DC148, DC54, DC55, DJ244H, DJ244B, DJ244A, DN24A
RO- Iași County	DC68, DJ244G, DN28, DJ249 main railway network 600	-	-	-
MD – Strășeni Raion	L450, R44, R25, L414 or G96, L447	L450, R44, R25, L414 or G96, L447	L450, R25, R44, R1	L442, L443, R1, G82.2, G82.1 main railway network Chișinău-Strășeni
MD – Nisporeni Raion	G92, M1 or E581, R10	M1 or E581	G91, M1 or E581	-
Cimișlia	-	-	-	R3
Leova	-	-	-	G102, R34

Legend: DC, L – communal; DJ, G – regional; DN – national; M – express; E – European; R – republican;

Source: ANCPI <https://geoportal.ancpi.ro/>; Harta interactivă – Î.S. Administrația de Stat a Drumurilor

<https://www.asd.md/>; <https://www.merstren.md/harta.html>

Following the in-depth MCA of Alternative Routes 1 and 2, no major differences were identified compared to the previously assessed Option 3 and Option 4 routes that would require further mention.

Related to natural gas and water-sewage systems, electricity and telecom networks a more detailed analysis will be performed during Full ESIA Report for the optimum route chosen between Alternate 1 and 2, and mainly during the engineering stage of the project.

Airport's location related to the T-Line proposed routes are as follows: closest distance is in RO – Iași International Airport with 50 km from Alternate 1; and in MD – Chișinău International Airport with 14 km from Alternate 2.

5.4 Land Use and Ownership/Tenure

In the area of interest for the project the analysis of the land use is presented in the table below based on the last statistical data available after the last official censuses, related to land use structure and ownership at national level for both countries, at regional (Counties) level data being available only for RO.

Table 5-17 Land Use by Purpose in RO and MD, for the Last Year with Registered Statistical Data

Statistical Indicator	National / Raions & Counties	Total Land	Agriculture	Crop Land	Orchards - Vineyards	Pastures – Hayfields – Uncultivated	Forests	Wetlands	Others
Land use (thousands ha)	RO national, 2014	23,839.07 100%	14,630.07 61%	9,395.30	406.36	4,828.41	6,734.00 28%	831.49 4%	1,643.51 7%
	Bacău, 2023	662.05	315.55	186.11	8.83	120.62	286.15	14.87	45.48
	Iași, 2021	547.74	395.96	275.92	18.35	101.70	96.43	13.03	42.32
	Vaslui County, 2023	531.84	401.49	292.51	14.61	94.39	75.09	5.67	49.58
	MD national, 2023	3,384.90 100%	2,493.00 74%	2,135.50	244.90	357.50	467.90 14%	96.90 3%	327.10 9%

Source: National Official Census final results RO; RO and MD National Statistical Institutes and Statistical Yearbooks

According to the data above, over 88%-89% of both national surfaces are predominantly agricultural land (RO 68%, MD 74%) and forestry (RO 28%, MD 14%) with a private ownership for farmland of 90% in RO and over 70% in MD.

Additionally, based on processed data from Google Earth and the MCA the table below present a preliminary assessment of the type of land crossed by each T-Line route options and expropriation needs.

Considering information extracted from publicly available sources, satellite imagery and aerial photography, the area of interest along each of the 4 options of the T-Line routes is predominantly farmland (different crops) and the need for expropriation varies from 79-95% in RO to 69-85% in MD (gross estimation as % of the total T-Line length).

Table 5-18 Top 3 Land Use Type Crossed by Each T-Line Route Options in RO and MD

T-Line	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
Country	Land Use Type	Length (%)	Land Use Type	Length (%)	Land Use Type	Length (%)	Land Use Type	Length (%)
Romania (% of the total length)	crop land	64%	crop land	68%	crop land	70%	crop land	76%
	forests	19%	forests	17%	pasture-hayfield	10%	pasture-hayfield	8%
	uncultivated	7%	uncultivated	6%	uncultivated	7%	uncultivated	7%
Gross estimate for expropriation needs in RO	-	80%	-	79%	-	95%	-	95%
Republic of Moldova (% of the total length)	crop land	70%	crop land	79%	crop land	73%	crop land	74%
	forests	24%	forests	19%	forests	23%	vineyards	14%
	vineyards	5%	vineyards	2%	vineyards	3%	forests	11%
Gross estimate for expropriation needs in MD	-	69%	-	81%	-	78%	-	85%

Source: Consultant processed data from Google Earth, 2022

Following the in-depth MCA of Alternative Routes 1 and 2, no major differences were identified compared to the previously assessed Option 3 and Option 4 routes that would require further mention.

5.5 Archaeological and Cultural Heritage

Heritage refers to legacy and is divided into two categories: natural heritage (such as natural parks, reserves, etc.) and cultural heritage. The natural heritage - national parks and nature reserves, which are also Sites of Community Importance (SCI) or Special Aqua faunistic Protection Areas (SPA) - is mentioned and analysed in this Report – Chapters 5.1.5 (RO) and 5.2.5 (MD).

Cultural heritage includes tangible cultural heritage (which can be movable or immovable) and intangible cultural heritage (intangible). Tangible cultural heritage can be movable (consisting of objects of historical value, such as paintings, icons, sculptures, books, fabrics, traditional costumes, etc.) or immovable (buildings of historical value, ancient settlements, archaeological sites, etc.).

This chapter will screen the immovable tangible cultural heritage within the raions/counties crossed by the four T-Line routes, the analysis being focused on the existing heritage (archaeological, cultural and historical heritage) located inside localities and surrounding areas adjacent to these routes.

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

Overall, there are several archaeological sites crossed by the analysed T-Line routes. For the scoping stage – preliminary assessment, in **Table 5-19** were selected sites located in the immediate vicinity of the “socio-economic baseline corridor”, of 500 m each side from the central axis of the power transmission line, all along the proposed T-Line routes.

Table 5-19 Existing Cultural Heritage Sites Inside The “Socio-Economic Baseline Corridor”

Archaeological Sites (Number)	Option 1 – Red Route	Option 2 – Orange Route	Option 3 – Blue Route	Option 4 – Magenta Route
RO	8	7	4	7
MD	20	21	21	14

Source : Fondul Național de Date Spațiale <https://geoportal.md/ro>; Server Cartografic pentru Patrimoniul Cultural Național <https://map.cimec.ro/Mapserver/>

Most problematic proximities are presented in the following table.

Table 5-20 Existing Immovable Tangible Heritage – Areas of Interest in RO and MD (Sites in the T-Line Proximity)

T-Line Areas Of Interest	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
Romania								
Bacău County	Stefan cel Mare Commune		Archaeological sites at Gutinaș, Siliște location Neolithic - Bronze Age; Dacian-Roman period; Migration period; XVII c.					
	Ștefan cel Mare Commune, Viișoara Village	Eneolithic arch. site, Piscul Corbului location Eneolithic Cucuteni			-	-	-	-
	Găiceana Commune, Arini Village	Archaeological site, Dealul Popii location Bronze Age, Foltești culture			-	-	-	-
	Găiceana Commune and Village	The wooden church dedicated to "The Dormition of the mother of God"						
	-	-	-	-	Sascut Commune and Village	Archaeological site, Groapa de împrumut location Bronze Age		
	-	-	-	-	Podu Turcului Commune, Căbești Village	Archaeological site, Râpa Bujorii location Bronze Age		
	-	-	-	-	Glăvănești Commune and Village	Archaeological site, Cociuba-Dărmăcușa location		

T-Line Areas Of Interest	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
Vaslui County	Bunești-Averești Commune, Bunești Village	Archaeological site, Dealul Teiului location Neolithic, Cucuteni culture; Bronze Age, New culture; IV-I BC, La Tène, Geto-Dacian culture and Poienesti-Lukasevka; 3rd century Daco-Roman era, Poienesti-Vârteșcoi culture	-	-	-	-	-	-
	Poienesti Commune and Village	Archaeological site, Dealul Teiului location Neolithic, Cucuteni culture; Bronze Age, Noua culture; IV-I c. B.C., La Tène, Geto-Dacian and Poienesti-Lukasevka culture; III c., Dacian-Roman Age, Poienesti-Vârteșcoi culture			-	-	-	-
	Zapodeni Commune, Delea Village	Archaeological site, Pădurea Mărășeni location La Tène culture			-	-	-	-
	Zapodeni Commune and Village	Archaeological site, Capul Dealului location			-	-	-	-
	-	-	-	-	-	-	Banca Commune, 1 Decembrie Village	Tumul, Petrișoara location
	-	-	-	-	-	-	Banca Commune, Stoiești Village	Archaeological site, Răduleț location La Tène culture
	-	-	-	-	-	-	Banca Commune, Țifu Village	Archaeological site, Scriptănești location
Republic of Moldova								

T-Line Areas Of Interest	Option 1 – Red Route		Option 2 – Orange Route		Option 3 – Blue Route		Option 4 – Magenta Route	
Ialoveni Raion	-	-	-	-	-	-	Ialoveni City	11 arch. sites and 3 tumuli, Late Roman Age (III c.) – Medieval Age (XVIII c.).
Strășeni Raion	Lozova Commune	10 arch. sites and 1 necropolis “La Hotar with Vornicenii” Late Bronze Age, XIII c. B.C.; Medieval Age, XVI c.					-	-
	Strășeni Municipality	10 archaeological sites Neolithic, VI millennium B.C.; First and second Iron Age, XII-III c. B.C.; Late Roman Age, III-IV c.; Medieval Age, X-XVII c.					-	-

Source: Ministry of Culture, Republic of Moldova <https://mc.gov.md/ro/content/monumente-de-public>; Historical monuments List 2015, <https://patrimoniul.ro/ro/articles/lista-monumentelor-istorice>

Following the in-depth MCA of Alternative Routes 1 and 2, no major differences were identified compared to the previously assessed Option 3 and Option 4 routes that would require further mention.

During full ESIA stage, additional details will be provided when analysing the optimum chosen T-Line route.

6.0 Environmental and Socio-Economic Initial Potential Impacts Assessment

6.1 Introduction & Further T-Line Development

The preliminary assessment of the potential impacts associated with the Project aims to analyse the options considered to establish the optimum one based on environmental and socio-economic factors.

This preliminary assessment will also identify the scope and the level of detail required for the full ESIA Report for the Project. Depending on the preliminary assessment, for each environmental and socio-economic factor, a narrower survey corridor will be proposed for assessing the impact within the ESIA report.

The preliminary assessment was based on the environmental and socio-economic baseline (presented in *Chapter 5 Environmental and socio-economic current status*), on the technical characteristics of the investment, and on the previous experience in carrying out similar projects of stations and overhead lines.

Also, the assessment was based on the two further developed T-Line routes: **Alternate Route 1** (former Route 3 Blue) and **Alternate Route 2** (former Route 4 Magenta)³⁸. The T-Line routes, together with upgrades within the existing Gutinaș ES, the alternate underground option at Gutinaș ES and selected Strășeni ES expansion layout - Option 2 (North-South), represent the feasible investment options evaluated for their potential environmental and socio-economic impact.

The main T-Line characteristics and the description of developed Alternate route, including the Multi Criteria Analysis are presented below.

▪ T-Line Main Characteristics

The OHL will be constructed in compliance with the norms of the RO and MD and the required right-of-way (ROW) widths were assumed to be 75 meters in normal areas and 54 meters in forested areas.

38 Following the ground-level route reconnaissance along the proposed T-Line corridors in RO and MD, it was determined that Route 1 (Red) and Route 2 (Orange) were not suitable for further development

In each Alternate route, the OHL will be equipped with standard existing tower family framings from Moldelectrica (MD) and Transelectrica (RO). Depending on the position of the tower along the T-Line alignment, the following types of towers will be used:

- Suspension Towers – used along the straight portions of the OHL route and in locations where tower attachments do not experience uplift;
- Angle Tension Towers – used at locations where the OHL route changes direction and/or where tower attachments experience uplift;
- 'Dead-end (terminal) Towers – used as the first tower outside of a substation.

The estimated number of towers for the Alternate routes are: Alternate Route 1: 697 towers (RO: 472; MD: 225); • Alternate Route 2: 888 towers (RO: 524; MD: 364).

The 400 kV OHL will be equipped with three (3) conductors per phase, type ACSR 300/69 mm², protected against aeolian vibration by using spacer dampers. Spacer dampers will be installed in spans in accordance with a dampening study to be completed during detailed design.

Two ground wires will be installed, both of which are planned to be 36 fibre OPGW, per discussions with Moldelectrica and Transelectrica. The OPGW characteristics will be finalized during detailed design in coordination with each respective TSO's telecommunication group and any other stakeholders.

The 400 kV OHL will be equipped with insulator strings made from toughened glass cap and pin elements. The quantity of bells per string and overall length of the insulation assembly will consider the pollution levels for the project region.

The tower foundations are anticipated to be reinforced concrete, sized according to the ground line reactions of each tower and the geotechnical characteristics of soil. A conventional grounding system using ground rods and grounding cable will be installed at each tower.

▪ Alternate T-Line Routes

The description of the developed alternate routes – Alternate Route 1 and Alternate Route 2, ***subject to the present preliminary environmental and socio-economic impact assessment***, are presented below.

Alternate Route 1 (Blue)

Alternate Route 1 begins at the riser pole located north of the Gutinaş Substation and proceeds as an overhead transmission alignment between the project endpoints.

The route extends approximately 216 km, with approximately 144 km in RO and 72 km in MD.

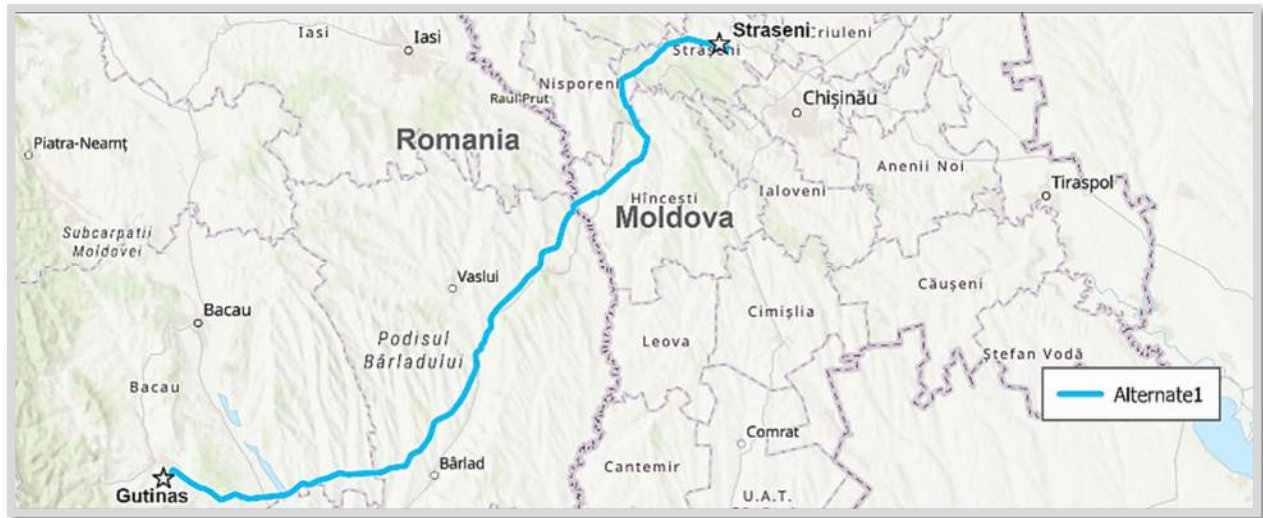


Figure 6-1 400 kV OHL Strășeni - Gutinaș, Alternate Route 1 (Blue)

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

From the riser pole, the overhead line proceeds generally eastward toward Strășeni.

Within RO, the route crosses multiple transportation corridors, including national and regional roads, railways, and two crossings of the Trotuș River. The alignment traverses complex terrain, including the Pădurea Mesteacănului forest, where tree clearing and careful structure placement are required. Where feasible, the route follows existing transmission corridors to reduce constructability risk and limit new corridor development. The alignment also crosses the Siret River and associated spillway south of the Siret Reservoir before continuing east across predominantly agricultural land.

As the route progresses northward, it includes multiple directional changes to avoid population centres while navigating ridge terrain and increasingly congested corridors. Alternate Route 1 crosses the Prut River and international border just south of Baile Drânceni, at a location identified as free of Natura 2000 restrictions. After entering MD, the route continues northeast through mixed-use farmland and infrastructure corridors, avoiding environmentally protected areas and population centres where practicable.

Approaching the Strășeni area, the route encounters higher population density and increased infrastructure congestion, requiring additional alignment refinement before terminating at the Strășeni substation expansion site.

In terms of neighbouring human settlements, after narrowing the socio-economic baseline survey corridor from ≤ 500 m to < 100 m, the most problematic passing-overs and very close locations for T-Line Alternate 1 route were:

- Republic of Moldova - Cristești v., MD-Nisporeni raion 50-80 m; Lozova v. and c.; Lozova v., MD-Strășeni raion ≤ 60 m; isolated settlement near Strășeni ES, MD-Strășeni raion ≤ 10 m;
- Romania - Borzești neighbourhood crossed over, Onești city, RO-Bacău County; Valea Nacului v., Sascut c., RO-Bacău County ≤ 20 m; Sârbi v., Podu Turcului c., RO-Bacău County ≤ 40 m; Coroiștei v. and c., RO-Vaslui County ≤ 50 m.

Alternate Route 2 (Magenta)

Alternate Route 2 begins at the riser pole located north of the Gutinaș Substation and proceeds as an overhead transmission alignment between the project endpoints.

The route extends approximately 237 km, with approximately 124 km in RO and 111 km in MD.



Figure 6-2 400 kV OHL Strășeni – Gutinaș Alternate Route 2 (Magenta)

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

From the riser pole, the overhead alignment proceeds generally east and southeast, traversing rural and mixed-use corridors.

The initial overhead routing in Romania generally parallels Alternate Route 1, including crossings of major roadways, railways, the Trotuș River, the Pădurea Mesteacănului forest, and the Siret River and spillway. Beyond this shared corridor, Alternate Route 2 diverges southeast, crossing the Bârlad River and additional transportation infrastructure before approaching the Prut River farther south than Alternate Route 1.

Alternate Route 2 crosses the international border within a Natura 2000 protected area on the RO side of the Prut River. After entering MD, the alignment traverses mixed-use farmland and forested areas, with multiple directional adjustments to avoid population centres and minimize

tree clearing. In several locations, the route parallels a newly constructed 400 kV T-Line, increasing corridor congestion and constructability considerations.

As the route approaches the Strășeni area, it encounters increasing population density and infrastructure complexity, requiring multiple roadway and railway crossings and alignment refinements before terminating at the Strășeni substation expansion site.

In terms of neighbouring human settlements, after narrowing the socio-economic baseline survey corridor from ≤ 500 m to < 100 m, the most problematic passing-overs and very close locations for T-Line Alternate 2 route were:

- Republic of Moldova - Ialoveni city, MD-Ialoveni raion ≤ 50 m; Chișinău Mun. at the boundary of a residential area, S-E of Dumbrava v.; isolated settlements cross-over at N-E of Ghidighici Lake, MD-Strășeni raion; periphery of Strășeni city - near Strășeni ES, MD-Strășeni raion ≤ 30 m;
- Romania - Valea Nacului v., Sascut c., RO-Bacău County ≤ 55 m; Sârbi v., Podu Turcului c., RO-Bacău County ≤ 40 m; Coroiști v. and c., RO-Vaslui County ≤ 50 m; Vetrișoia v. and c., RO-Vaslui County ≤ 70 m.

▪ Alternate Underground option at Gutinaș Substation

Two underground routing options were developed and evaluated *as standalone alternatives* to assess the feasibility of fully underground transmission configurations near the existing Gutinaș Substation.

Alternate Underground Route 1 (Blue)

Alternate Route 1 (UG) represents the shortest underground option evaluated. The underground alignment is approximately 208 m in length.



Figure 6-3 400 kV Strășeni - Gutinaș, Alternate Underground Route 1

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

Beginning at the existing Gutinaș Substation, Alt Route 1 (UG) proceeds north for approximately 30 meters before making a sharp turn to the northeast for approximately 17 m. The alignment then makes a second sharp turn to the north and continues for approximately 161 m, terminating at a defined underground endpoint north of the substation.

This underground configuration minimizes the overall length of underground construction while navigating an area with dense existing infrastructure near the substation.

Alternate Underground Route 2

Alternate Route 2 (UG), approximately 2.56 km in length, was developed to route underground construction through a less congested corridor south and east of the Gutinaș Substation.

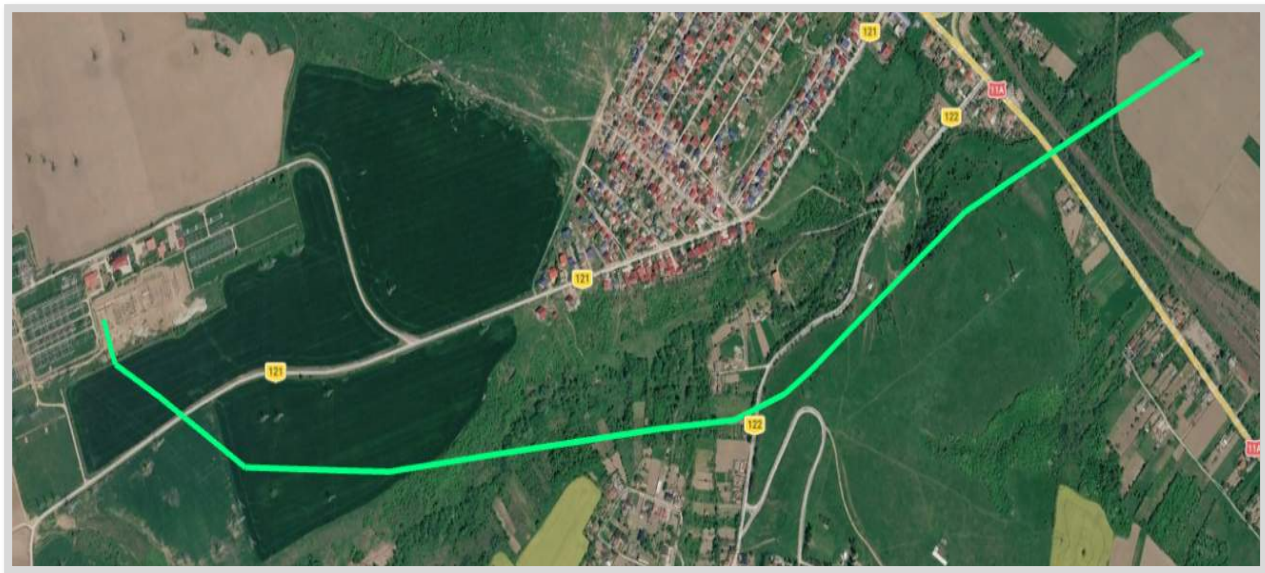


Figure 6-4 400 kV Strășeni – Gutinaș Alternate Underground Route 2

Source: Draft Strășeni – Gutinaș 400 kV Transmission Line Feasibility Study, Black & Veatch

Beginning at the existing Gutinaș Substation, Alt Route 2 (UG) proceeds south, crossing Route 121, before turning east and passing through the village of Rădeana and crossing Route 122. The alignment then turns north-northeast, crossing Route 11A and several railway lines, and terminates at a defined underground endpoint north of the substation.

• Multi Criteria Analysis for Alternate Routes

For the Alternate routes (1 and 2), the Multi Criteria Analysis were performed, following the approach presented in *Chapter 4.2 Preliminary Multi Criteria Analysis for T-Line route selection*.

Alternate Route 1 achieved the lowest composite score of 287.17 and ranked first overall, while Alternate Route 2 received a composite score of 316.63 and ranked second. Alternate Route 1 performed more favourably across the Environmental, Infrastructure, and Technical categories, while Alternate Route 2 showed limited localized advantages in acquisition related metrics that did not outweigh its higher environmental impacts, increased route length, and greater technical complexity.

The composite score for each of the routes along with a comparison of the scoring for the technical, infrastructure, and environmental categories of the alternate routes are presented in the following table.

Table 6-1 Final Overall Alternate Route

	ROUTES	
	Alternative Route 1	Alternative Route 2
Route Length (km)	216 km	237 km
Composite Score	287.17	316.63
Numerical Ranking	1	2
Environmental Factors	48.91	65.82
Infrastructure Factors	2.34	2.67
Technical Factors	168.25	181.98
Acquisition Factors	67.67	66.15

Source: Draft Strășeni – Gutinaș 400 kV transmission line Feasibility Study, Black & Veatch

Alternate Route 1 represents the most balanced and viable routing option for advancement into subsequent Project phases. The alternate provides a favourable international border crossing location, reduces exposure to environmentally protected areas, limits infrastructure conflicts, and demonstrates improved constructability across both countries. Alternate Route 2 remains technically feasible but presents higher overall risk due to environmental constraints and corridor congestion.

6.2 Physical environment

6.2.1 Potential Impact on Soil and Undersoil

During the construction stage of the 400 kV Strășeni - Gutinaș T-Line and the extension of the existing power stations, the Project's potential impact is determined by the execution of the construction-erection works (temporary work platforms for the OHL route and for the works in stations, foundations of the OHL towers and the equipment in the new station configuration, road traffic, temporary storage of the construction materials, etc) that may lead to increased vulnerability to erosion and landslides and to the increase of the probability of soil pollution as a result of improper management of construction materials and handling of hazardous substances (fuels, lubricants, transformer oil, paint).

During the field visit along the proposed 400 kV Strășeni - Gutinaș T-Line routes, no physical or geological phenomena such as landslides and eroded lands were observed.

According to the preliminary information there are no geological reserves near the proposed 400 kV OHL proposed alternative routes.

During the operational stage, the Project's potential impact is associated with the maintenance activities that may affect the quality of the soil / subsoil (accidental leakage of dangerous substances - oils, lubricants, paints, etc.).

During the decommissioning stage, the Project's potential impact is represented by the increased probability of soil pollution as a result of improper management of waste and handling of hazardous substances resulting from decommissioning activities (accidental leakage of fuel and lubricants).

From an environmental perspective, *Alternate Route 1 (Blue)* is the preferred option due to the shorter overall T-Line length (216 km vs. 237 km), which significantly minimizes the potential impact on soil and undersoil. A shorter T-Line route reduces the total area of land permanently occupied by tower foundations and limits potential soil disturbance during the construction stage. As part of the full ESIA, for the optimum 400 kV Strășeni - Gutinaș T-Line route, the following activities will be carried out:

- Positioning the optimum 400 kV T-Line route on the digital maps available in RO and MD (geological, groundwater, landslides, eroded soils);
- Elaboration of a geological study along the optimum 400 kV T-Line route to identify the existing status for the towers location (engineering-geological profile, hydrogeological conditions, dangerous geological processes, chemical composition of groundwater, etc);
- Defining the optimum 400 kV T-Line route, by establishing the final position of OHL towers so that vulnerable areas (landslides, eroded lands, and groundwater) to be avoided as far as possible.

For the optimum 400 kV Strășeni - Gutinaș T-Line route will be estimated the temporarily occupied land areas (temporary working platforms for the OHL route, the working corridor for the OHL) and the permanently occupied land surfaces (foundations of the OHL towers) in order to assess the Project's impact and to identify the proper measures to reduce the negative effects.

Considering that the optimum 400 kV Strășeni - Gutinaș T-Line route will avoid sensitive areas (landslides, eroded lands, groundwater resources), in order to characterize the impact associated with the Project stages within the full ESIA, a narrower area of the survey corridor is proposed, respectively an survey corridor with a total width of 1 km (0.5 km on both sides of the power line axis) which includes the 400 kV T-Line route, the provisional work platforms and the electric stations.

6.2.2 Potential Impact On Water

During the construction / decommissioning stage of the 400 kV Strășeni – Gutinaș T-Line, and the extension of the existing power stations, the direct impact of the Project works (excavation

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works, oil / diesel leaks from equipment or vehicles, etc.) will be encountered in restricted areas and may be minimized, through the use of preventive measures.

The Project is not expected to have any impact on underground water, not even in the area where the level of groundwater sheet is high. The new constructions are represented by the foundations (of towers/ equipment/ installations) that are limited surfaces.

During the operational stage, the Project's potential impacts on surface water will be associated with the maintenance activities that may affect the quality of the waters (accidental leakage of dangerous substances - oils, lubricants, paints, etc.).

The potential impact on waters associated with the two proposed alternatives of the OHL route depends directly on the number of watercourses and lakes crossed, and on the length of the crossings presented in **Table 6-2**.

Table 6-2 OHL Routes In Relation to Watercourses And Lakes – Crossings

Name	Alternate Route 1 (Blue), 216 km	Alternate Route 2 (Magenta), 237 km
Intermittent Stream/River	0.11	0.06
Ponds	0.07	0.03

Source: Draft Strășeni – Gutinaș 400 kV transmission line Feasibility Study, Black & Veatch

As part of the full ESIA, for the optimum 400 kV T-Line route, the final position of the towers will be established so as to avoid the white streams / the riverside strips of water protection, the sanitary protection area of the water inlets (water surface, groundwater, artesian wells) and potentially floodable areas.

For all of the Project's stages (construction, operation, decommissioning), the impact on water resources will be assessed and the appropriate mitigation measures will be identified.

6.2.3 Potential Impact on Air Quality

During the construction/ decommissioning stage of the 400 kV Strășeni - Gutinaș T-Line and the extension of the existing power stations, the pollutant emissions (NO_x, SO₂, VOC, CO, particulate matter/ dust) are expected to arise from the traffic increase in the work area and from the equipment used for works; the pollutant emissions will be on short time and located in the site area. During summer months, in dry periods, fugitive dust emissions may be a problem that might be solved by applying construction / decommissioning best practice measures (water spray techniques on the work areas, speed reduction on unpaved roads, etc.).

During the operational Stage, in addition to the pollutant emissions associated with road traffic (periodic inspections and maintenance activities), under certain atmospheric conditions (rain, fog

or ice fog), the electric discharge of Corona effect may occur ionizing the air around active conductors and forming the ozone.

Within the full ESIA, the impact of the ozone formation associated with the OHL will be assessed based on available studies regarding the measurements carried out in the vicinity of similar OHL. The ozone concentration associated with the OHL will comply with the air quality legislation in force in MD and EU.

OHL will not directly affect air quality. Indirectly, the Project may support the development of a more efficient system for electricity transport, because the power line may transport electricity produced by efficient power plants and / or with low pollutant emissions.

The impact of pollutant emissions on air quality associated with the Project depends mainly on the length of the routes and on the number of sensitive receptors located in the immediate proximity (< 100 m) of the T-Line routes, namely:

- Alternate Route 1 (Blue) 400 kV Strășeni - Gutinaș: length 216 km, 7 localities;
- Alternate Route 2 (Magenta) 400 kV Strășeni - Gutinaș: length 237km, 8 localities.

The shortest length of Alternate Route 1 (Blue) is directly correlated with lower pollutant emissions during the construction and decommissioning stages, which significantly decreases the cumulative exposure of sensitive receptors to fugitive dust and traffic-related pollutants. For the optimum 400 kV T-Line route, as part of the full ESIA, the sources of pollutant emissions associated with the Project will be identified in order to assess the air quality impact and the proper mitigation measures for each of the Project's stage (construction, operation, decommissioning) will be established.

6.2.4 Climate Change

In order to assess the Project's potential impact on climate change, the Project's GHG associated emissions, and its reduction potential will be estimated.

For the assessment of the Project's potential impact on climate change, as part of the full ESIA, the GHG emissions reduction potential obtained by Project implementation, expressed as CO₂ equivalent, will be estimated by carrying out the following steps:

- Estimation of the annual GHG emissions associated with the Project, namely SF₆ emissions, that directly depend on the number of high voltage circuit breakers provided in stations;
- Estimation of the annual GHG reduction potential associated with the Project, as difference between:

- “Without Project” Scenario: the electricity generation is assumed to be produce in MD, in a power plant on fossil fuel;
- “With Project” Scenario: MD will import annually certain amount of electricity from RO.

Climate change is a challenge for the production and transport of electricity due to the gradual increase of temperature, the number and severity of extreme weather phenomena and the change in precipitation patterns. Thus, the predicted dynamics of the relevant climatic factors will be analysed as part of the full ESIA.

Regarding the climate change adaptation, Alternate Route 1 (Blue) is expected to have a reduced exposure to extreme events due to its shorter overall length (216 km vs. 237 km).

For the optimum 400 kV Strășeni - Gutinaș T-Line route, as part of the full ESIA, the potential impacts of climate change on proposed Project will be evaluated and proper adaptation measures integrated as part of Project’s planning, design and implementation will be established.

6.2.5 Potential Impact on Noise and Vibration

From the noise and vibration impact point of view, the sensitive receptors are represented by the localities/isolated settlements situated in the immediate proximity (< 100 m) of the 400 kV T-Line routes, namely:

- Alternate Route 1 (Blue) 400 kV Strășeni - Gutinaș: length 216 km, 7 localities;
- Alternate Route 2 (Magenta) 400 kV Strășeni - Gutinaș: length 237 km, 8 localities.

The existing sources of noise and vibration are mainly represented by the road transport along the T-Line route and stations, including several express, regional and local roads.

During the construction / decommissioning stage of the 400 kV Strășeni - Gutinaș T-Line and the extension of the existing power stations, the typical noise of construction works (assembly / dismantling – decommissioning) cannot be avoided, but it might be reduced by the use of equipment and means of transport with a low level of noise and with a proper technical state and by establishing the working hours are between 7.00 and 17.00.

During the operational stage, noise and vibration may occur due to the Corona discharge phenomenon, the action of the wind or the electric line itself. The noise made by the OHL conductors might be avoided by mounting spacers and vibration dumpers.

According to different studies and measurements undertaken in extreme conditions, an OHL can produce within the protection corridor of 60 m width a noise with a maximum intensity of 52 dB.

Alternate Route 1 (Blue) passes near 7 localities compared to 8, and its shorter overall length will also reduce the duration of construction activities and the period of noise exposure for the local population.

For the 400 kV Strășeni - Gutinaș T-Line optimum route, as part of the full ESIA, the sources of noise and vibration will be identified as well as the mitigation measures for all the Project's stages (construction, operation, decommissioning).

6.2.6 Potential Impact on Landscape and Visual Environment

The visual impact of an OHL is obvious and permanent. Thus, it is recommended that from the design phase, appropriate solutions for different types of surfaces are considered, in accordance with the natural, historical and traditional conditions. The solutions must consider a relatively slender tower design, OHL routes aligned in parallel with the existing structures, etc.

During the Construction Stage there will be some areas where temporary service platforms will be necessary for the tower erection, for the conductors mounting and for access in a 3 m width working corridor. At the end of the construction works the affected land will be restored to the original form.

During the first months of the operational stage, the OHL conductors may be more visible under certain light conditions - the metal wires are bright or reflect the sunlight and dazzling stars appear on them. As time pass this effect is reduced due to weather conditions that transform the metal surface, becoming dull.

From the potential visual and on the landscape impact point of view, *the optimum 400 kV Strășeni - Gutinaș T-Line route is the Alternate Route 1 (Blue)* that has the shortest overall length.

6.3 Biological Environment

For the preliminary assessment of the impact on biodiversity associated with the 400 kV Strășeni - Gutinaș T-Line routes, all the category of the natural protected areas within the OHLs survey corridors have been considered and are summarized in Table 6-3.

Table 6-3 The Natural Protected Area Located in the OHL's Survey Corridors

Country	Natural Protected Area	Name	Included in OHL Survey Corridors? YES/NO		
			Alternate Route 1 (Blue)	Alternate Route 2 (Magenta)	
Romania	Natura 2000 sites				
	ROSPA0063	Lacurile de acumulare Buhuși - Bacău - Berești	YES	YES	
	ROSAC0162	Lunca Siretului Inferior	YES	YES	
	ROSPA0071		YES	YES	
	ROSAC0334	Pădurea Buciumeni - Homocea	YES	YES	
	ROSAC0169	Pădurea Seaca - Movileni	YES	YES	
	ROSPA0159	Lacurile din jurul Măscurei	YES	YES	
	ROSCI0309		YES	YES	
	ROSCI0360	Râul Bârlad între Zorleni și Gura Gârbăvoșului	YES	YES	
	ROSPA0167		YES	YES	
	ROSPA0162	Mânjești	YES	NO	
	ROSCI0335	Pădurea Dobrina - Huși	YES	NO	
	ROSCI0041	Coasta Rupturile Tanacu	YES	NO	
	ROSPA0119	Horga - Zorleni	NO	YES	
	ROSCI0286	Colinele Elanului	NO	YES	
	ROSPA0170	Valea Elanului	NO	YES	
	ROSCI0213	Râul Prut	YES	YES (Cross)	
	ROSPA0168		YES	YES (Cross)	
	IBA sites				
		ROSPA0063	Lacurile de acumulare Buhuși - Bacău – Tătăraști	YES	YES
		ROSPA0071	ROSPA0071 Lunca Siretului Inferior	YES	YES
		ROSPA0119	Horga - Zorleni	NO	YES
Moldova	Natural protected areas				
	RP	Voloca Verbca	YES	NO	
	ANPP	Bujor RNS	YES	NO	
	RP	Dolna	YES	NO	
	RS	Codru	YES	NO	
	AMMsrvl	Luncă cu bumbăcăriță	YES	NO	
	MNGP	Râpa "La Chetrărie"	YES	NO	
	RNM	Ecosistemul acvatic "Lebăda Albă"	NO	YES	
	AMMsrvl	Luncă inundabilă cu vegetație de baltă	NO	YES	

Country	Natural Protected Area	Name	Included in OHL Survey Corridors? YES/NO	
			Alternate Route 1 (Blue)	Alternate Route 2 (Magenta)
	RNS	Vila Caracui	NO	YES
	RNS	Molești	NO	YES
	RNS	Molești-Răzeni	NO	YES
	MNGP	Aflorimentul Costești	NO	YES
	MNGP	Reciful Ialoveni	NO	YES
	RNS	Sector-etalon de pădure	NO	YES
	Emerald Network			
	MD0000044	Lebăda Albă	NO	YES
	MD0000048	Châzlar – stepă	NO	YES
	MD0000043	Lunca Ialplug	NO	YES
	MD0000019	Pădurea Hâncești	NO	YES
	MD0000010	Codrii Strășenilor	YES	YES
	MD0000042	Aria Naturală Nemțeni	YES	NO
	MD0000037	Zberoaia – Prut	YES	NO
	MD0000028	Vila Nisporei	YES	NO
	MD0000004	Codru	YES	NO
	IBA sites			
	MD007	Lower Prut River and Manta-Beleu Lake	NO	NO
	MD010	Hâncești Forest, partially overlap with MD0000019 Pădurea Hâncești (Emerald network)	NO	YES
	MD005	IBA Pădurea Centrală, partially overlap with MD0000004 Codrul and MD0000010 Codrii Strășenilor (Emerald network)	YES	YES

Source: Consultant processed data (based on Ch. 4.1.5 & 4.2.5)

As presented in the table above, Alternate Route 2 involves environmental constraints due to its passage through a protected Natura 2000 area on the RO side of Prut River. This alignment significantly increases the procedural complexity and the scope of mitigation required for the Project.

For the selected 400 kV Strășeni - Gutinaș T-Line route, the full ESIA will ensure that all necessary mitigation measures are implemented to minimize the impact on natural protected areas (by avoiding as much as possible the protected areas, minimizing the number of towers, and reducing the length of the crossing, etc.).

If the OHL route intersects migration paths or is near the nesting sites there is a potential, although reduced, risk of electrocution or collision for bird species. Thus, as part of the full ESIA, a detailed analysis of the risks associated with the OHL will be carried out to assess the potential impacts on bird species and propose appropriate mitigation measures.

Following the T-Line route approval, the boundaries of the biodiversity survey corridor will be established by biodiversity experts as a site-specific buffer prior to the start of field monitoring campaigns. To ensure a comprehensive baseline, the field monitoring campaigns will cover critical biological periods such as migration, breeding, and wintering.

This corridor will be defined based on species distribution, ecosystems and the ecological patterns, processes, features and functions necessary for maintaining them. This approach ensures that all critical biodiversity within the Project footprint and its associated surrounding habitats are fully considered.

An OHL can change the existing landscape leading to the reduction of green areas. From the design stage the route of the OHL was chosen to avoid crossing existing forests. If isolated shrubs or trees need to be cut, they will be replaced nearby with new ones.

6.4 Socio-Economic Environment

The impacts on the socio-economic environment will be further investigated and specified in the Full ESIA Report, and also include the parameters that need to be followed up and targeted in the ESMP as well as incorporated in the SEP. The presentation below illustrates the identified challenges and gives priority to the impacts foreseen.

Based on the results from the ESIA Scoping Report the main challenge in the project area will be the impact on land access both during the construction and operation.

One major challenge will be to identify and ensure that all landowners are engaged, will have a voice being able to react and take part in the decision-making process for establishing the optimum T-Line route and the new location for the new Strășeni ES, MD. The stakeholder's engagement plan is presented in the SEP Report, and the public consultation process is defined in the EIA law in both countries RO and MD (see Chapter 3 Legal and Policy Framework).

Following the administrative transition from USAID to the U.S. Department of State, all previously established environmental and social safeguards remain applicable (e.g. Sector Environmental Guideline – Construction³⁹). Therefore, the Project will comply with the

³⁹ Sector Environmental Guideline – Construction, USAID, 2017 <https://usaidgems.org/sectorGuidelines.htm>

standards and procedures defined under the Code of Federal Regulations, Part 216, Title 22 (22 CFR 216)⁴⁰ to ensure continuity, accountability, and best international practices.

6.4.1 Potential Impact On Community

According to the baseline assessment performed in **Chapter 5.3**, in terms of socio-economic sensitive areas (project site's location in close proximity to /or/ passing over local communities/human settlements), the less problematic route is Alternate 2 (magenta), followed by Alternate 1 (blue), but certain impacts on land use for farming or other productive purposes cannot be avoided.

Sensitive areas in terms of potential social impacts were identified (**Table 5-10**) along T-Line routes Alternates 1 and 2, related to human settlements or industrial/agricultural facilities in the proximity or inside a buffer zone (left-right from the central axis of the T-Line route), namely the socio-economic risk analysis corridor which was narrowed from $\leq 500 \text{ m} + 500 \text{ m}$ to $< 100 \text{ m} + 100 \text{ m}$. To this aim, conclusions are the following:

- T-Line Strășeni-Gutinaș – Alternate 1 route: avoids habited places, except the overcrossing of Borzești neighbourhood, Onești city, Bacău County, RO; the detailed routing design in the Feasibility Study will consider mitigating this negative impact; expropriation needs are lower considering the route length (216 km) and the total estimated number of towers structures (697).
- T-Line Strășeni-Gutinaș – Alternate 2 route: avoids habited places, so no relocations/resettlements are needed, but expropriation needs are higher considering the route length (237 km) and the total estimated number of towers structures (888).

As previously mentioned in Chapter 5.3.1 in terms of T-Line routes Alternate 1 and 2 interaction with or passing over local communities/human settlements, for both countries – Alternate 1 is recommended with the exception of the proximity to the human settlement/agricultural farm near ES Strășeni (south-west) – in Republic of Moldova, Strășeni Raion, and Borzești neighbourhood, Onești city cross-over near ES Gutinaș – in Romania, Bacău County.

There will be visual impacts from the OHL and also impacts from any sound that is resulting from the construction and operation.

During Site Preparation and Construction stage the project potential impact is linked to potential restriction in reaching land and also blocking of roads. There will also be high levels of transport which could potentially increase the risk of traffic accidents.

⁴⁰ U.S. Code of Federal Regulations - PART 216—ENVIRONMENTAL PROCEDURES, January 2026 <https://www.ecfr.gov/current/title-22/chapter-II/part-216>

The suggested T-Line routes will not require relocation of any people or industrial activity. The farming activities will be affected when the towers and powerlines are under construction. The construction phase will require additional land to be used also for raising towers (working platforms), conductors and wires stringing etc. This means that certain compensation to the landowners will be required also for accessing land for this stage of the project.

At the same time, dust, engine emissions, vibrations and noise will be generated by the increased traffic, construction of the new Strășeni ES and the worker's temporary camp.

Also, temporary increased presence of local or/and migrant workers, and security personnel in the project areas could have a **minor positive impact** on public utilities and services, supply demand.

The construction of T-Line and Strășeni ES are expected to generate only few permanent direct jobs locally, but some indirect short-term income opportunities will be induced. However, some temporally employment opportunities will be created during this stage of the project, overall resulting in a **positive minor impact**.

The overall initial impact is estimated **moderate to substantial**, depending on the expropriation needs and type of land. In terms of physical displacement/human resettlements the impact of the project is negligible.

During the operation stage the project's potential impact is mainly generated by the permanent tower footprint on the land, the potential sound (buzzing) from the transmission line, visual impacts from the community and not complying with the protection and safety instructions. Economic displacement and compensation will be required to mitigate people's livelihood.

The impact in terms of economic displacement is **moderate to substantial**, and in terms of physical displacement is **negligible**.

The land between the towers may continue to be used for agricultural or other purposes, but there will be restrictions associated with the use of certain equipment (i.e. high vehicles) and activities (i.e. standing on top of higher objects such as a wagon underneath the power line) in the direct vicinity of the T-Line route. Restrictions could also emerge related to houses construction inside the T-Line protection corridor. The electric and magnetic fields generated in the power line will not exceed allowed levels at ground level meaning that there are no restrictions in terms of working or standing below the transmission line.

Information to farmers and agricultural workers, including workers at vineyards and orchards, will be needed in order to increase awareness related to the magnetic and electric fields generated from the OHL, the exposure, and associated risks. Impacts from magnetic field and/or electric field are expected to be **moderate to low**.

During the Decommissioning Stage the project's potential impact is represented by the need to access land for decommissioning. The impacts will be similar to the construction stage (**moderate to substantial**) – the need for access to land affecting the landowners/users. After decommissioning the land for towers would be available for farming again, the impact being expected to be **minor (positive)**.

6.4.2 Potential Impact on Infrastructures

The infrastructure which could be affected by the project are roads, water and sewage systems, railways, existing power and telecom lines. The baseline situation has been outlined in **Chapter 5.3.3**. It is recommended that at the engineering stage (technical design) to avoid potential impacts and mitigation measures to be considered.

On the other hand, it can be mentioned that activities linked to construction and operation stages can contribute to improving societal services (education and health systems) and infrastructure, thus the potential impact being assessed as mainly positive.

During Site Preparation and Construction stage of Strășeni ES and the 400 kV T-Line Gutinaș-Strășeni, the potential impact will affect the access to roads and certain land areas as the construction works will require such. Some heavy transports may also have impacts on the road infrastructure. There is need to ensure that the construction work and related transport are done considering road specifications and that the roads are not left damaged after construction is done.

The general public, vulnerable groups in affected areas will have to be informed about power cuts, restrictions on road accessibility etc. It is critical that during the construction no damage is done to several public networks such as water or sewage, natural gas, electricity, telecom, and a sound technical design is performed to avoid such risks. Proper caution should be taken when passing any infrastructure pipes, cables, or roads – **low to minor** impact

During the Operation stage of the project, supporting energy security will generate a **positive impact**. No negative impacts are expected from the operation of the T-Line and both ES.

During the Decommissioning Stage, the project's potential impacts are similar to those that occur during the construction phase.

6.4.3 Potential Impact on Cultural Heritage

Both countries have abundant cultural heritage sites (archaeological sites, historical monuments and buildings), all along the T-Line proposed routes (Alternates 1 and 2). Hence, the project will most likely have an impact on existing, known, and unknown, cultural heritage during construction, operation, and decommissioning stages.

During site preparation and construction stage existing cultural heritage sites in the close vicinity of the T-Line routes were identified in Chapter 5.5. Further analysis should be carried out during the preparation of the Full ESIA Report. The risk of finding new unidentified archaeological sites along the T-Line routes is assessed as high.

According to both countries' national legislations, in the area where there is a potential archaeological site, the preparation and construction site has to be approved by the Ministry of Culture, based on the expertise performed by a National Archaeological Authority and a permit issued for archaeological discharged. The entire procedure has to be supported by each project promoters (MEL and TEL).

The risk that important cultural and archaeological artefacts could be discovered and harmed during the construction stage is expected to be **moderate to substantial**.

No impact on cultural heritage is anticipated ***during the operation stage*** of the proposed T-Line or Strășeni ES.

During the decommissioning stage, no impacts are expected considering that any cultural heritage sites were already discovered during the construction stage of the project.

6.4.4 Potential Impact on Public Health

During the construction stage, the potential impact on public health is due to increased traffic on public and access roads which may increase the risk of traffic accidents. Additionally, nearby residents may face temporary respiratory risks due to dust level and exhaust emissions from heavy machinery and construction equipment.

During the operation stage, residents living near the T-Line shall be informed of the activity restrictions within the OHL corridor. There are risks associated with coming too close to the T-Line wires during operation. Furthermore, the presence of Electric and Magnetic Fields (EMF) is a primary concern for public health. The Project will be designed to ensure that EMF levels at the edge of the Right-of-Way (ROW) comply strictly with national and international guidelines in order to mitigate any potential long-term health effects. Details related to the EMF exposure and its implications for residential and occupational activities in close proximity to the T-Line will be provided in the full ESIA report.

During the decommissioning stage, the impact is similar to the construction stage, mainly involving traffic-related risks and dust emissions during the removal of infrastructure.

Even if the nature of the potential impact on public health during the construction, operation and decommissioning stages is expected to be similar for both T-Line routes, Alternate 1 (Blue) is expected to generate a lower exposure to traffic risks and dust emissions due to a shorter construction period associated with its length.

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

6.4.5 Potential Impact on Occupational Health and Safety

The main potential impact on the health and safety of workers is expected *during the construction stage*, but some long-term impacts on occupational health and safety are foreseen also during the operation and decommissioning stages.

Occupational safety hazards during the construction stage include, among others, exposure to physical risks due to the use heavy equipment and cranes, working at heights, falling objects, exposure to dust, noise and hazardous materials as well as electrical hazards from the use of tools and machinery.

During the operation stage, the main risks for workers are associated with repair and maintenance works. Any person involved in these activities shall have proper training and comply with safety regulations. Systematic follow-up of routines and training is required in order to maintain a high level of awareness among all personnel involved in operation and maintenance regarding the risks associated with this equipment.

During the decommissioning stage, the impact is similar to the construction stage.

The potential impact on occupational health and safety during the construction, operation and decommissioning stages is expected to be similar for both T-Line routes. However, Alternate 1 (Blue), with its shorter length (216 km vs. 237 km), implies a lower probability of impact on occupational health and safety compared to Alternate 2 (Magenta).

6.4.6 Potential Impact on Land Use and Tenure

The change of land use due to construction, operation and decommissioning of the proposed project will have impact on property, income, and livelihood (mainly due to changed agricultural use) in local communities along the proposed T-Line routes.

Considering information extracted from publicly available sources, satellite imagery and aerial photography, the area of interest along both Alternates 1 and 2 of the T-Line route is predominantly farmland (different crops) and the need for expropriation varies from 79-95% in RO to 78-85% in MD (gross estimation as % of the total T-Line length).

During site preparation and construction stage, temporarily occupied land will be necessary for the preparation of towers foundations and areas where towers will be positioned, as well as areas for raising of the towers and connection of cables and wires. Temporary access roads will have to be constructed to each tower. After construction and raising of towers and wires are completed the temporary roads and land occupied for construction works can be returned to original land use.

The construction works should be planned accordingly in order to minimize the negative impacts on farming activities and other land use needs for the most affected people.

The surfaces of the permanent affected land, as compared to total farmland, are small, thus the impact was assessed as **moderate to low/minor**.

During the operation stage the major changes are related to the total surface permanently occupied by the tower's foundations. Detailed information on this total surface will be provided in the Full ESIA Report.

The land located in the protection and safety corridor can still be used for agriculture, orchards, viticulture, and grazing, considering that people are informed and observe the protection and safety requirements. The land area permanently occupied by towers and the new ES is insignificant relative to the overall land area under nominal management. Compensation shall be given to the landowners.

The overall impact is estimated to be **moderate to low**.

Impact during decommissioning stage is similar as during construction. Certain land will be made available again. This land could be offered back to farmers with adjacent land and thus create **minor (positive) impact income opportunities**.

7.0 Structure of Full ESIA Report

7.1 ESIA Objectives and Overview

ESIA Report will be performed in compliance with the requirements of EU Directives on EIA and with the environmental and social policies and guidelines adopted by the International Financial Institutions.

The proposed assessment process and impact assessment will include the following stages:

- Ensuring compliance with legislative requirements applicable to the Project (national and European legislation as well as the environmental and social policies and guidelines adopted by the International Financial Institutions);
- Project description and Analysis of Alternatives: Detailed technical description of the Project (T-Line route and substations extension); detailed assessment of the developed T-Line routes (Alternate Route 1 and Alternate Route 2), focusing on technical, environmental, and social criteria to justify the selection of the optimum alignment that minimizes the footprint on local communities and ecosystems;
- Establishing the existing environmental, biological and socio-economic baseline: Integrating data from official reports, databases and digital maps (geological, hydrogeological, landslides, surface water network, forests, protected areas, cultural monuments, archaeological sites, infrastructure, etc.) and identification of the authorities that hold these databases; validating the constraints (natural protected sites, forest areas, cultural heritage) for the optimal T-Line route;
- Impact on the biodiversity: Assessing the presence of protected species within the MD natural protected areas and RO Natura 2000 network; evaluating habitat fragmentation; establishing site-specific mitigation and monitoring measures to ensure the conservation of priority habitats and species;
- Impact on migratory birds': Assessing collision and electrocution risk along sensitive sections of the OHL; establishing site-specific mitigations (e.g., bird-marking devices) and monitoring measures to minimize Project potential impact;
- Withdrawal of land: Identification of the land permanently occupied by tower foundations, including the ownership;
- Impact on air quality: The investment will not produce emissions during operational phase, but during construction stage, measures for pollution prevention has to be considered;

- Impact on climate change: Assessment of GHG emissions / reductions associated with the Project (the stations transformers use SF6 to isolate the equipment); identification of the potential climate risks; assessment of the Project's resilience to climate hazards and defining specific adaptation measures to ensure long-term operational safety;
- Impact on water and soil: Some of the equipment used at construction works (vehicles and devices) or during operational phase (transformer and Diesel engines) uses liquid fuel; establishing mitigations measures for prevention of the leakages on soil, surface or underground water;
- Impact on noise and vibration: the sources of noise and vibration will be identified as well as the proper mitigation measures for all the Project's stages;
- Electromagnetic field: An analysis of the possible effect of stations and OHL on radio and TV interference and on workers and the public under normal operating condition will be developed during full ESIA;
- Impact on economy and tourism: Qualitative assessment of the potential impact of investment on tourism and recreation;
- Update the Stakeholder Engagement Plan (SEP);
- Development of the Environmental and Social Management and Monitoring Plan (ESMMP): Defining specific mitigation, management and monitoring measures for all Project phases (design, construction, operation, and decommissioning); establishing institutional responsibilities, reporting schedules to ensure full environmental and social compliance;
- Development of the Land Acquisition and Compensation Framework (LACF);
- Identifying Moldelectrica's and Transelectrica's labour and working conditions requirements and proposed measures and policies, if necessary;
- Assisting Moldelectrica during public consultation, information and public debate meetings and preparation of any support materials/documentation.

The environmental and social impact assessment of the extend of existing power stations and the T-Line during the design, construction-erection, operation and decommissioning stages will be based on field studies, consultations with the involved authorities, stakeholders feedback and on expert judgment.

7.2 Draft Structure Of ESIA Report

The ESIA Report will be structured in seven sections that will describe and evaluate the Project's impact considering the impact of each stage of the Project (designing, construction, operation and decommissioning) on the physical, biological and socio-economic environment:

- Introduction on the purpose of the Project and on the scope and approach of ESIA;
- The legal and policy framework in MD;
- The Project description and analysis of alternatives;
- The environmental and socio-economic baseline (MD);
- Potential environmental and socio-economic impacts, including characterisation of impacts and opportunities;
- Mitigation measures and residual environmental and socio-economic impacts;
- Non - Technical Summary, NTS;
- Environmental and Social Monitoring and Management Plan, ESMMP;
- Environmental and Social Action Plan, ESAP;
- Land Acquisition and Compensation Framework, LACF;
- Stakeholders Engagement Plan, SEP.

7.3 Draft ESIA Time Schedule

ESIA Approach

During 23-27 September 2024, the field screening and stakeholders' identification stages were performed in both countries RO and MD, by the Project team (consultants BV and CCEM), together with both TSOs – MEL and TEL, for a preliminary identification of the possible affected areas by the construction of the 400 kV OHL, both in terms of environmental and socio-economic aspects.

The Project implementation schedule spans a total duration of **16 months**, tracking all deliverables sequentially from Month 1 through Month 16.

Within 30 days after Project starts (Month 1), the Scoping and baseline data collection phase will be finalized. With the support of Moldelectrica, detailed information will be requested from

competent authorities regarding the environmental and socio-economic baseline for the Project area (hydrogeological, land slices, water streams, forests, natural protected areas, cultural monuments and archaeological sites, etc.). Information will be required in digital format in order to avoid any sensitive areas and to minimize the potential negative impact.

The contact with key stakeholders (the authorities involved, farmers associations and the general public) will be done throughout the entire Project implementation. Concurrently, the first draft of the SEP will also be ready at the end of Month 3, with subsequent iterative draft updates scheduled for the end of Month 6 and Month 9.

In order to evaluate the current status of biodiversity in the Project area, a 12-month biodiversity monitoring program (6 months in 2026 and 6 months in 2027) has been scheduled in the field, especially for monitoring:

- Day raptors migrating along the Prut corridor (autumn migration);
- Winter raptors wintering in the area (tracking winter raptors);
- Night raptors nesting in the Project areas (inventory);
- Geese wintering in the Project areas or crossing these areas to the wintering zones.

Throughout the entire Project implementation, Interim Biodiversity Monitoring reports will be submitted on a quarterly basis.

The Final Biodiversity Monitoring Report will be submitted at the end of Month 14.

ESIA Disclosure Package

After Moldelectrica approves the final Project location (the optimum 400 kV OHL Strășeni - Gutinaș route and Strășeni station), the analysis of the potential impacts of the proposed Project on the environment and socio-economic conditions will be conducted on a case-by-case basis and proper mitigation measures will be identified in order to avoid, minimize / reduce and mitigate adverse impacts and to enhance positive impacts where applicable.

For each environmental and socio-economic aspect considered, in order to quantify the investment impacts, the ESIA methodology will be established considering potential changes to the physical, biological and socio-economic environment.

In **Month 3**, the LACF should be ready, based on the information available at the Feasibility stage of the Project and also the initial draft of the SEP.

For the Project, that is likely to generate transboundary impacts, the requirements specified under the Espoo Convention will be followed.

The *Preliminary ESIA Disclosure Package* (ESIA draft Report, NTS, SEP, ESMMP, ESAP and LACF) should be ready by the end of **Month 13**. The ESIA draft report will include the version in Romanian to comply with the National Environmental Procedure.

In **Month 14**, the package will undergo official Stakeholder review. All preliminary disclosure documentation will be distributed to the relevant stakeholders at least one week prior to the commencement of the official disclosure period, and at least two weeks prior to the disclosure meetings thus ensuring stakeholders have enough time to review the documentation prior to the meetings.

The Public Consultation will take place on **Month 15**, and the public comment period will conform strictly to national legislation and EU requirements.

Final ESIA Disclosure Package

After including Moldelectrica comments and integrating feedback from the public consultation process, the *Final ESIA Disclosure Package* is expected to be submitted by the end of **Month 16**. The ESIA final report will be delivered bilingually, in English and Romanian.

Environmental Permitting Procedure

In parallel with the ESIA, after Moldelectrica approves the final Project location (the optimum 400 kV OHL Strășeni - Gutinaș route and Strășeni station), the procedure for obtaining the *Environmental Agreement* in line with national legislation will be carried out. The competent environmental authority will be informed about the planned activity. In line with Law no. 86/2014 on Environmental Impact Assessment, the *Application related planned activity* (the Environment Requesting Report, including the EIA schedule) will be prepared and submitted (**Month 3**). During the initial evaluation, the Application will be reviewed, and the competent environmental authority will decide on the need for the Environmental Impact Assessment (EIA) procedure and also the scale (EIA procedure at transboundary level or national level).

Considering that the 400 kV OHL Strășeni - Gutinaș route and Strășeni station crosses the Prut River and the border between MD - the Party of origin and RO - the affected Party, the procedure under the Espoo Convention will be carried out. As the Party of origin, MD will send a notification through the Ministry of Environment to the affected Party, with general information about the Project and its likely transboundary impact.

If the affected Party responds affirmatively to the notification, the EIA procedure will be conducted with the participation of the affected Party. The concerned Parties (Party of origin and affected Party) shall make practical arrangements for the distribution of the EIA documentation to the authorities and the public of the affected Party in the areas likely to be affected and shall assure the public participation in the transboundary EIA.

The EIA documentation will include the comments issued during the public consultation process.

8.0 Stakeholders' Engagement

8.1 Introduction

Stakeholders' engagement and social impacts are considered in all project's international donors/lenders programs. It is an integral step in ESIA preparation and is required by all IFIs standards and regulations, including U.S. Code of Federal Regulation, Part 216, Title 22 (22 CFR 216) – Reg. 216⁴¹.

Stakeholder engagement is a best practice to include when preparing complex Initial Environmental Examinations (IEE). During the scoping process Reg. 216 requires stakeholder engagement and 22 CFR 216.3(a)(4)(i) states that, “persons having expertise relevant to the environmental aspects of the proposed action shall also participate in this scoping process.” Participants may include, but are not limited to, “representatives of host governments, public and private institutions, the AID Mission staff, and contractors.” International best practices recognize the importance of early engagement with local communities, indigenous peoples, and individuals who may be impacted by the proposed project.

This preliminary SEP, included in the ESIA Scoping Stage information disclosure package will help/guide the Consultant team in determining whether this standalone report together with a preliminary social impact assessment suffice, or whether a full social impact assessment is necessary to understand potential impacts, manage risks, and plan for the mitigation of adverse impacts.

Another purpose of SEP is to provide a basis for a constructive relationship between the contract owner and the affected stakeholders over time, covering the whole life of the project, including site preparation, construction, operation and decommissioning.

SEP will be an instrument for both operators of the national electricity grids TRANSELECTRICA (TEL), Romania and MOLDELECTRICA (MEL), Republic of Moldova in describing their strategy and program for engaging with stakeholders, through the various stages of this Project (planning - studies and consulting, engineering; construction - commissioning and operation), by ensuring relevant and understandable information and by providing, to all the project's targeted public, opportunities to express their views and receive responses.

41 U.S. Code of Federal Regulations - PART 216—ENVIRONMENTAL PROCEDURES, January 2026
<https://www.ecfr.gov/current/title-22/chapter-II/part-216>

8.2 Stakeholders' Identification and Analysis

According to the WB – ESS10⁴² stakeholder refers to “individuals or groups who: (a) Are affected or likely to be affected by the project (project-affected parties); and (b) May have an interest in the project (other interested parties)”.

In general, stakeholders are divided in two main groups: internal and external public. For a comprehensive approach of external stakeholders' categories structuring, the QHC⁴³ (Quadruple Helix Collaboration) model has been analysed and chosen, so the engagement process is implemented at the level of the four main categories: public entities, industry, research and academia, and civil society. For additional details please see the SEP Report (Stakeholders Engagement Plan).

Based on the Stakeholders Power/Influence Matrix, stakeholders' analysis and prioritisation were performed, and a project stakeholders prioritisation diagram emerged, highlighting the most powerful and interested stakeholders:

- Local Public Administration – impacted communities
- People affected directly by the construction and/or operation of the T-Line
- Government officials and policy makers and National Regulatory Authorities / Agencies
- Internal stakeholders - project promoters
- Internal stakeholders - project donors/lenders
- NGOs and Labour Unions

8.3 Disclosure of Information

The objective of the disclosure process is to solicit feedback from project potentially affected human settlements/households, vulnerable groups and interested stakeholders, propose mitigation actions and, where required, to make the necessary changes to the ESIA Scoping Report to reflect comments received.

42 ESS10 - Stakeholders Engagement and Information Disclosure
<https://documents1.worldbank.org/curated/en/476161530217390609/ESF-Guidance-Note-10-Stakeholder-Engagement-and-Information-Disclosure-English.pdf>

43 Arnkil, R.; Järvensivu, A.; Koski, P.; and Piirainen, T. (2010). Exploring the Quadruple Helix Report of Quadruple Helix Research for the CLIQ Project, 28 June 2010,
<https://trepo.tuni.fi/bitstream/handle/10024/65758/978-951-44-8209-0.pdf?sequence=1&isAllowed=y>

The ESIA Scoping Report - project information package which will be disclosed for stakeholders' consultations, will be subject to limitations regarding commercial and industrial confidentiality, including intellectual property and the protection of public interest, in accordance with the national EIA legislation of the two countries: for Moldova, **Law no. 86/2014** on Environmental Impact Assessment, and for Romania, **Law no. 292/2018**, transposing the EIA Directive 2014/52/EC (former amended Directive 2011/92/EU).

SEP also includes a grievance procedure for interested public to receiving feedback from TSOs – MOLDELECTRICA (MD) and TRANSELECTRICA (RO) to their concerns/complaints or comments related to the project.

The current version of the SEP and other public documents (ESIA Scoping Report, and Non-Technical Summary - NTS), as part of the initial information disclosure package, will be available and further updated, during the planning stage of Strășeni – Gutinaș 400 kV T-Line Interconnector, at the following links and postal addresses:

Table 8-1 Project Promoters and Donors/Lenders Where the Initial Information Package Will Be Disclosed

Republic of Moldova	Romania
▪ Î.S. MOLDELECTRICA headquarter and website: MD 2012, mun. Chișinău, str. V. Alecsandri, 78 anticamera@moldelectrica.md, (+373) 22 22-22-70 https://moldelectrica.md/ ▪ Î.S. MOLDELECTRICA regional branch - RETI Centru: MD-2055, mun. Chișinău, or. Vatra, str. Luceafărul 13 anticamera@centru.moldelectrica.md, (+373) 22 30-93-59 ▪ 330 kV Strășeni Electrical Substation: MD 3700, or. Strășeni, str. M. Costin nr. 14 ▪ U.S. Embassy in Chișinău, Moldova headquarter and website: MD 2009, Republica Moldova, mun. Chișinău, str. Mateevici 103 ChisinauACS@state.gov, (+373) 22-408-300 https://md.usembassy.gov/ ▪ U.S. Department of State (DOS) - Bureau of European and Eurasian Affairs, Office of the Coordinator of US Assistance to Europe, Eurasia, and Central Asia (EUR/ACE). United States website https://www.state.gov/countries-areas/moldova/	▪ CNTEE TRANSELECTRICA SA headquarter and website: RO- 030786, mun. București, str. Olteni nr. 2-4, sector 3 office@transelectrica.ro, (+40) 374 580 453 https://www.transelectrica.ro/ ▪ CNTEE Transelectrica SA - Territorial Transmission Branch Bacău (TTB): RO-600266, Bacău County, str. Oituz nr. 41 secretariat.bacau@transelectrica.ro, (+40) 234 207 120 ▪ 400/220/110 kV Gutinaș Electrical Transformation Substation: RO-607605, Ștefan Cel Mare commune, Gutinaș village, Bacău County ▪ U.S. Embassy in Bucharest, Romania headquarter and website RO 015118, Romania, București, str. Dr. Liviu Librescu nr. 4-6, district 1 (+40) 21 200-3300, https://ro.usembassy.gov/ ▪ U.S. Department of State (DOS) - Bureau of European and Eurasian Affairs, Office of the Coordinator of US Assistance to Europe, Eurasia, and Central Asia (EUR/ACE). United States website https://www.state.gov/countries-areas/romania/

Further locations for displaying the ESIA Scoping information package can be agreed upon. These can include administrative buildings (mayoralities) and websites of the following public authorities:

Department of State Investments in Developing Energy Assets (IDEA) - Contract No. 7200AA22C00047

Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

Table 8-2 Public Authorities Where the Initial Information Package is Recommended to be Disclosed

Republic of Moldova	Romania
▪ Ialoveni Local Council and Ialoveni Raion Council – MD 6801, Ialoveni Raion, Ialoveni city, str. Alexandru cel Bun 45; (+373) 268 22 484, primaria.ial@gmail.com, https://ialoveni.md/ – MD-6801, Ialoveni city, str. Alexandru cel Bun 33, (+373) 268 20007, ialoveniconsiliu@gmail.com, https://www.ialovenionline.md/ ▪ Strășeni Local Council and Strășeni Raion Council – MD 3701, Strășeni Raion, Strășeni Mun., str. M. Eminescu 32; (+373) 237 22343, primaria.straseni11@gmail.com, https://www.straseni.md/ – MD 3701, Strășeni Mun., str. Mihai Eminescu 28; (+373) 237 23630, consiliulraional@crstraseni.md, https://crstraseni.md/ ▪ Lozova Mayoralty MD-3721, Strășeni Raion, Lozova v., Lozova c.; (+373) 237 47236, secretariatlozova@gmail.com ▪ Cristești Mayoralty and Nisporeni Raion Council – MD-6424, Nisporeni Raion, Cristești v.; (+373) 264 52290, vdumaschi7@gmail.com – MD-6401, Nisporeni city, str. Ioan Vodă 2, (+373) 264 2-2650, cr.nisporeni@gmail.com, https://nisporeni.md/	▪ Onești Local Council and Bacău County Council – bd. OITUZ nr. 17, Onești Mun., Bacău County, RO 030786; (+40) 234 324.243, primarie@onesti.ro – Calea Mărășești nr. 2, Bacău Mun. RO 600017; (+40) 234 537.200, csjbacau@csjbacau.ro, https://www.csjbacau.ro/ ▪ Ștefan cel Mare Local Council Ștefan cel Mare Commune, Bacău County, RO 607605; (+40) 234 339.000, stefancelmare@bc.e-adm.ro, https://www.comunastefancelmare.ro/ ▪ Sascut Local Council Str. Principală, Sascut Commune, Bacău County, RO 607520; (+40) 234 280.639, primariasascut@yahoo.com, https://www.primaria-sascut.ro/ ▪ Podu Turcului Local Council Podu Turcului v., Bacău County, RO 607450; (+40) 234 289.226, primarie@poduturcului.ro, https://poduturcului.ro/ ▪ Vetrișoia Local Council and Vaslui County Council – Vetrișoia v., Vaslui County, RO 737570; (+40) 235 432.003, primariavetrisoia@yahoo.com, https://primariavetrisoia.ro/ – str. Ștefan cel Mare 79, Vaslui Mun. RO 730168; (+40) 235-361.089, consiliu@cjvs.eu, https://cjvs.eu/

Responsibility for rolling-out the disclosure activities will be:

- during the Feasibility Study stage of the project - the consultant designated by the lenders/donors;
- during the other project stages (engineering & design; construction-commissioning; operation; decommissioning) – both TSOs (MOLDELECTRICA, MD and TRANSELECTRICA, RO).

During the ESIA process, a formal public consultation campaign will be conducted, along the optimum chosen T-Line route, carried out by both TSOs – Transelectrica (RO) and Moldelectrica (MD) project teams working alongside the consultants' consortium, including information disclosure and stakeholders' information-sharing events. Special attention will be given to people that live along the optimum chosen T-Line route (an analysis corridor of less than 50 m left/right the T-Line axis for the social impact assessment) and land owners directly affected by the potential future productive land expropriations.

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Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

The main steps of the disclosure process will be:

- preparation and distribution (printed & online) of preliminary disclosure materials (disclosure information package);
- announcements and engagement of the media (press release);
- disclosure physical and/or virtual meetings;
- collection and incorporation of comments and feedback.

Additional details related to the types of information disclosed and the specific methods of communication to be undertaken by the local authorities for Strășeni- Gutinaș 400 kV T-Line project can be found in SEP Report.

8.4 Stakeholders' Engagement Programme

The planned and future engagement activities are structured as detailed in **Figure 8-41** and will be focused on the public consultation meetings to be enrolled during the ESIA process.

Until now, face to face meetings with governmental officials, public entities and TSOs have been taken place, during:

- **10-13 June 2024**, Chișinău, Republic of Moldova - Strășeni-Gutinaș 400 kV T-Line internal planning meeting and the official Project kick-off meeting;
- **23-27 September 2024**, Romania - Republic of Moldova - the scoping field mission, aiming to narrow the preliminary MCA from 4 T-Line routes options to only two alternatives 1 and 2;
- **13-14 November 2024**, Bucharest, Romania - internal progress review meeting and the official Project Introductory meeting with the Romanian authorities;
- **3 December 2025**, Chișinău, Republic of Moldova – internal meeting project progress review and financial support transfer;
- **28 April 2026**, Chișinău, Republic of Moldova - internal meeting - progress review and draft Reports approval (FS, ESIA Scoping and SEP).

Additional details can be found in SEP report.

Time	Activity	Report	
Planning stage of the project	ESIA scoping (Q3-Q4, 2024 – Q1-Q3, 2026)	Stakeholders' identification & PRE-ESIA analysis	
		Introductory meetings to RO & MD permitting authorities Scoping onsite mission	
		First draft SEP and Scoping ESIA reports submitted for review by the project promoters/beneficiaries (TEL and MEL)	
		Upload online Project Factsheet; Grievance Form ESIA Scoping and SEP Reports	ESIA Scoping Report and SEP
		Disclosure of ESIA Scoping and SEP reports	
		Preparing and unrolling Scoping meetings and online survey	
		Assess results	
		Identification of key issues – input to the reports	
		Preparing the draft Full ESIA Report	Submit the draft Full ESIA Report and updated SEP for TEL and MEL
		Disclosure of the Draft full ESIA, ESMMP, NTS and updated SEP	
Planning stage of the project	ESIA consultation and disclosure process (Q3-Q4, 2026 – Q3-Q4, 2027)	Preparing ESIA consultation process	
		Unrolling public consultations program	
		Assess results	Reviewing all documents
		Disclosure of the reviewed versions of the full ESIA Report, ESMMP, NTS and SEP	
		Comments and suggestions for improvement	
		Final ESIA, ESMMP & SEP	Submit Final ESIA, ESMMP and SEP
Implementation stage of the project	Ongoing Consultation Process	Working site preparation Construction Commissioning Operation	Updates of SEP along with project construction and operation, performed by TEL and MEL

Ongoing dialogue and face-to-face meetings

Figure 8-1 SEP Programme

Source : Consultant expert judgement

8.5 Grievance Mechanism

A grievance mechanism will be implemented to ensure that both TSOs – Moldelectrica (MD) and Transelectrica (RO) are responsive to any concerns and complaints particularly from affected stakeholders and communities.

A schematic flow for the grievance mechanism is presented in figure below. Both verbal and written complaints are to be registered and documented.

Any comments or concerns can be brought to the attention of each TSO verbally (by phone) or in writing (by post or e-mail) or by filling in a grievance form (see SEP Report for details).

The grievance form will be made available online and in printed form in the mayor's office, schools, community centres and other public places that are easily accessible for all relevant stakeholders, alongside a description of the grievance mechanism.

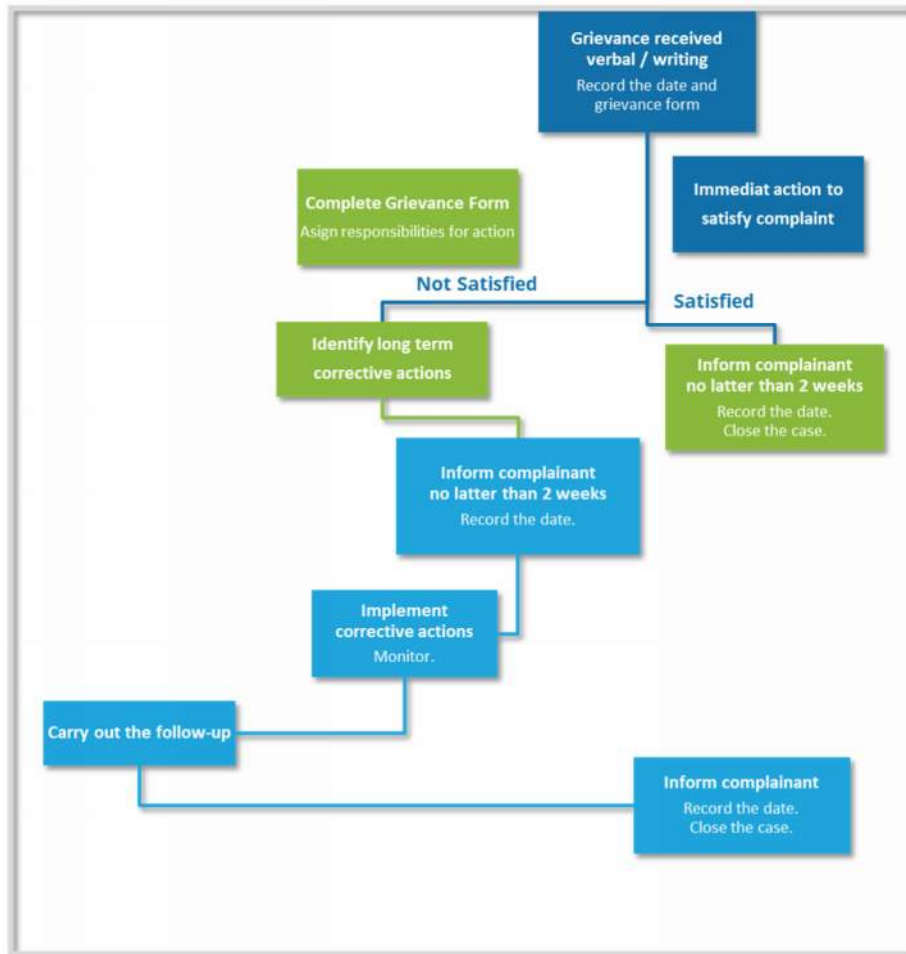


Figure 8-2 Grievance Procedure

Source: Consultant experts' assessment based on literature review

8.6 Monitoring and Reporting

ESIA monitoring group, in each country (MD and RO), is recommended to have a balanced and neutral (without favour) structure focussed on environmental and social potential future issues generated along to the project development stages (planning, implementing, construction, commissioning, and operation). Environmental protection experts (inspectors and regulators) will monitor and report, according to each national legal framework in force, all related impacts.

Consultation records, minutes of meetings and query forms of informal consultations (face-to-face interviews) will be maintained by both TSOs – Moldelectrica (MD) and Transelectrica (RO) recommended Community Liaison Officers - CLOs and consultants' consortium social impact responsible representative (see details in SEP Report).

It is also recommended that periodic (4Q) Reports summarising the activities and key emerging themes raised by affected groups will be performed. The Annual Report will be also prepared, by both TSOs (MEL/MD and TEL/RO) CLOs, summarising SEP results, based on which updated information will be delivered back to key stakeholders' group, including also the project work progress during the development stages of Strășeni-Gutinaș 400 kV T-Line.

Each TSO (MEL/MD and TEL/RO) will act consequently – activate feedback loop and implement corrective measures, both in the environmental and social field.

9.0 Conclusion

The present ESIA Scoping Report conducted for the 400 kV Strășeni (MD) – Gutinaș (RO) T-Line concludes that the project is technically feasible and essential for regional energy integration.

Based on the ESIA Scoping Report the following key conclusions have been reached:

Regulatory and Standards Compliance

The Project shall comply with a complex regulatory framework. The full ESIA will be developed in strict accordance with:

- National Legislations: both RO (EU-aligned) and MD legal frameworks regarding environmental protection and land acquisition;
- International Standards: International best practices as required by the U.S. Department of State (DOS).

T-Line Route Selection and Multi-Criteria Analysis

For the Project, four potential T-Line route options were evaluated: Route 1 (Red); Route 2 (Orange); Route 3 (Blue); Route 4 (Magenta). The T-Line routes were subject to the Multi-Criteria Analysis.

The expansion of the Strășeni (MD) ES and the upgrade of the Gutinaș (RO) ES are confirmed as necessary to support the new interconnection between MD and RO.

Environmental and Socio -Economic Baseline

The baseline conditions were identified for all four potential T-Line route options to identify design constraints and sensitive receptors within the survey corridors. The focus was on:

- Physical Environment: air quality; climate changes; soil and subsoil (including seismic risks, soil erosion, and landslide susceptibility); water resources (including flood risks);
- Biodiversity: natural protected areas within the T-Line survey corridors (Natura 2000, Emerald, and IBAs sites); forest funds;
- Socio-economic environment: demographics and living standards; public utilities infrastructure; land use and ownership; archaeological and cultural heritage.

Preliminary Environmental and Socio-Economic Impact Assessment

The preliminary impact assessment was conducted for two shortlisted T-Line routes: Alternate Route 1 (former Route 3 Blue) and Alternate Route 2 (former Route 4 Magenta), as the other two were unsuitable for further analysis.

The ESIA Scoping process identifies the preliminary impact on environmental and socio-economic aspects and underlines the future activities to be developed as part of the full ESIA Report.

The Project might require specific mitigation measures (to be defined in the full ESIA Report) due to natural protected areas within the T-Line survey corridors and potential migration paths or nesting sites. Additionally, a potential impact on the community is expected due to economic displacement related to land restrictions.

Overall, the Project implementation is expected to have a positive impact on climate change mitigation and employment opportunities.

According to the preliminary assessment, Alternate Route 1 (Blue) is the preferred option due to the shorter overall T-Line length and its strategic alignment, which avoids the sensitive Natura 2000 area on the RO side of Prut River, thereby significantly reducing potential fragmentation of natural habitats. Consequently, this route is recommended for further development in the full ESIA Report.

Stakeholder Engagement

As part of the ESIA Scoping Report, an initial Stakeholder Engagement Plan and a Grievance Mechanism have been outlined to ensure transparent communication with affected communities and authorities in both countries.

Next Steps

This ESIA Scoping Report establishes the roadmap for the Full ESIA Report. Future activities will focus on detailed field surveys (e.g. biodiversity observations in the Project area), the preparation of the Preliminary ESIA Disclosure Package (ESIA Report, NTS, SEP, ESMMP, ESAP and LACF) and extensive public consultations.

10.0 References

International Conventions, EU Legislation and Guidelines

- [1] Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), <https://unece.org/environmental-policy-1/convention-environmental-impact-assessment-transboundary-context-espoo>
- [2] Convention on Long-Range Transboundary Air Pollution (Aarhus, Denmark, 1998), <https://unece.org/environmental-policy/air/protocols>
- [3] United Nations Convention on Climate Change – UNFCCC (New York, 1992), <https://unfccc.int/>
- [4] Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992), <https://unece.org/environment-policy/water>
- [5] Vienna Convention for the Protection of the Ozone Layer (Vienna, 1985) and its Montreal Protocol, <https://ozone.unep.org/>
- [6] United Nations Convention on Biological Diversity (Rio de Janeiro, 1992), <https://www.cbd.int/>
- [7] United Nations Convention on Wetlands of International Importance – Ramsar Convention (Ramsar, Iran, 1971), <https://www.ramsar.org/>
- [8] United Nations Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 23 June 1979), <https://www.cms.int/>
- [9] Convention of the Conservation of European Wildlife and Natural Habitats – Bern Convention (Bern, 1982), <https://www.coe.int/en/web/bern-convention>
- [10] Convention Concerning the Protection of the World Cultural and Natural Heritage – UNESCO World Heritage Convention (Paris, 1972), <https://whc.unesco.org/en/conventiontext/>
- [11] European Convention on the Protection of the Archaeological Heritage (Revised) – Valetta Convention (Valetta, 1992), <https://www.coe.int/en/web/culture-and-heritage/valetta-convention>
- [12] European Convention on Landscape (Florence, 2000), <https://www.coe.int/en/web/landscape>

- [13] UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters – Aarhus Convention (Aarhus, Denmark, 1998), <https://unece.org/>
- [14] Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32011L0092>
- [15] Directive 2000/60/EC establishing a framework for Community action in the field of water, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02000L0060-20141120>
- [16] Directive 2008/98/EC on waste, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0098-20251016>
- [17] Directive 2002/49/EC relating to the assessment and management environmental noise, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32002L0049>
- [18] Directive 92/43/EC on the conservation of natural habitats and of wild fauna and flora, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A01992L0043-20250714>
- [19] Directive 97/62/EC adapting to technical and scientific progress Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31997L0062>
- [20] Directive 2009/147/EC on the conservation of wild birds, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32009L0147>
- [21] Decision 82/72/EEC concerning the conclusion of the Convention on the conservation of European wildlife and natural habitats, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A31982D0072>
- [22] Decision 82/461/EEC on the conclusion of the Convention on the conservation of migratory species of wild animals, <https://eur-lex.europa.eu/eli/dec/1982/461/oj/eng>
- [23] Recommendation 75/65/CEE of 20 December 1974, on the protection of the architectural and natural heritage, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A31975H0065>
- [24] Directive 89/391/EEC on the introduction of measure to encourage improvements in the safety and health of workers at work, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A01989L0391-20081211>

- [25] U.S. Code of Federal Regulations - PART 216—ENVIRONMENTAL PROCEDURES, January 2026 <https://www.ecfr.gov/current/title-22/chapter-II/part-216>
- [26] Sector Environmental Guideline – Construction, USAID, 2017 <https://usaidgems.org/sectorGuidelines.htm>
- [27] Guideline on Compulsory Displacement and Resettlement, USAID, May 2016 <https://tenuresecurity.org/tools-and-mission-resources/tools-and-guides/>

National legislation, RO & MD

Romania

- [1] GEO no. 195/2005 on environmental protection, <https://legislatie.just.ro/Public/DetaliiDocument/67634>
- [2] Law no. 292/2018 on the assessment of the effects of certain public and private projects, <https://legislatie.just.ro/Public/DetaliiDocument/208590>
- [3] Order no 269/2020 on the approval of the general guide applicable to the stages of the environmental impact assessment procedure, <https://legislatie.just.ro/Public/DetaliiDocument/223826>
- [4] Law no. 104/2011 on ambient air quality, <https://legislatie.just.ro/Public/DetaliiDocument/129642>
- [5] Law no. 107/1996 – Water Law, <https://legislatie.just.ro/Public/DetaliiDocument/8565>
- [6] GD no. 188/2002 for approving some norms concerning the condition of discharging the wastewater into aquatic environment, <https://legislatie.just.ro/Public/DetaliiDocument/34651>
- [7] GEO no. 57/2007 regarding the regime of natural protected areas, conservation of natural habitats, flora and fauna, <https://legislatie.just.ro/Public/DetaliiDocument/83289>
- [8] Law no. 5/2000 regarding the approval of the National Territorial Development Plan, <https://legislatie.just.ro/Public/DetaliiDocument/21860>
- [9] Order no. 1964/2007 on the establishment sites of community Importance as an integrant part of the European Ecological Network Natura 2000 in Romania, <https://legislatie.just.ro/Public/DetaliiDocument/89382>
- [10] GD 1284/2007 on establishing the special protected areas of avifauna as part of ecological European Natura 2000 network from Romania, <https://legislatie.just.ro/Public/DetaliiDocumentAfis/86542>

- [11] Law no. 331/2024 – Forest Code,
<https://legislatie.just.ro/Public/DetaliiDocumentAfis/293218>
- [12] GEO no. 92/2021 concerning waste regime,
<https://legislatie.just.ro/Public/DetaliiDocumentAfis/245846>
- [13] GD no. 856/2002 concerning the evidence of the waste management and approval of the list with type of waste, inclusive hazardous,
<https://legislatie.just.ro/Public/DetaliiDocument/38294>
- [14] GEO no. 43/2000 regarding the protection of the archaeological heritage and the declaration of some archaeological sites as areas of national interest,
<https://legislatie.just.ro/Public/DetaliiDocument/77109>
- [15] Law no. 422/2001 on the protection of historical monuments,
<https://legislatie.just.ro/public/detaliiidocument/29761>
- [16] Standard no. 10009/1989 –Acoustic. Permissible limits of noise level in urban environment.
- [17] Order of the Ministry of Health no. 119/2014 for the approval of hygiene and public health norms regarding the living environment of the population,
<https://legislatie.just.ro/Public/DetaliiDocument/266846>
- [18] Law no. 319/2006 on safety and health of workers at work,
<https://legislatie.just.ro/Public/DetaliiDocument/191078>
- [19] GD no. 1876/2005 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from vibration,
<https://legislatie.just.ro/Public/DetaliiDocument/68307>
- [20] GD no. 300/2006 on the minimum safety and health requirements for temporary or mobile construction sites, <https://legislatie.just.ro/Public/DetaliiDocument/83724>
- [21] GD no. 493/2006 on the minimum safety and health requirements regarding the exposure of workers to the risks generated by noise,
<https://legislatie.just.ro/Public/DetaliiDocument/83725>
- [22] GD no. 1091/2006 concerning the minimum safety and health requirements for the workplace, <https://legislatie.just.ro/Public/DetaliiDocumentAfis/74708>
- [23] GD no. 1146/2006 regarding the establishing the minimum safety and health requirements for the use of work equipment by workers at work,

[https://legislatie.just.ro/Public/FormaPrintabila/00000G1CFMLMLM46XGG188ZQACIHR
EDV](https://legislatie.just.ro/Public/FormaPrintabila/00000G1CFMLMLM46XGG188ZQACIHR
EDV)

- [24] GD no. 520/2016 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from electromagnetic fields,
<https://legislatie.just.ro/Public/DetaliiDocument/180509>
- [25] Law no. 307/2006 on fire protection,
<https://legislatie.just.ro/Public/DetaliiDocument/212916>
- [26] Law no. 544/2011 on Free Access to Information of Public Interest,
<https://legislatie.just.ro/Public/DetaliiDocumentAfis/31413>
- [27] Law no. 86/2000 for the Ratification of the Convention on Access to Information, Public Engagement in Decision-Making, and Access to Justice in Environmental Matters, signed in Aarhus on June 25, 1998 , <https://legislatie.just.ro/Public/DetaliiDocumentAfis/22438>
- [28] GD no. 878/2005 on the Access Right to Environmental Information,
<https://legislatie.just.ro/Public/DetaliiDocument/64373>
- [29] Law no. 363/2018 on Individuals' Protection Regarding the Processing of Personal Data by Competent Authorities,
[https://legislatie.just.ro/Public/FormaPrintabila/00000G3K82W5C60RDEZ1L4L4HTIGQLF
5](https://legislatie.just.ro/Public/FormaPrintabila/00000G3K82W5C60RDEZ1L4L4HTIGQLF
5)
- [30] Law no. 18/1991 on land fund, <https://legislatie.just.ro/Public/DetaliiDocument/1461>
- [31] Law no. 33/1994 regarding the expropriation for reasons of public utility,
<https://legislatie.just.ro/Public/DetaliiDocument/129800>
- [32] Law no. 255/2010 regarding the expropriation for reasons of public utility, necessary to achieve objectives of national, county, local interest,
<https://legislatie.just.ro/Public/DetaliiDocumentAfis/262745>
- [33] ANRE Internal Order nr. 239/20.12.2019 for the approval of the Technical Norm regarding the delimitation of protection and safety zones related to energy capacities
<https://legislatie.just.ro/Public/DetaliiDocument/222364>

Moldova

- [1] Law no. 86/2014 on Environmental Impact Assessment,
https://www.legis.md/cautare/getResults?doc_id=151414&lang=ro#
- [2] Order no. 150/2024 for the approval of the Guide regarding the environmental impact assessment procedures, https://www.legis.md/cautare/getResults?doc_id=144842&lang=ro

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Black & Veatch Special Projects Corp./ Compania de Consultanță în Energie și Mediu
Strășeni – Gutinaș 400 kV Transmission Line ESIA Scoping Report

- [3] Law no. 1515/1993 on environmental protection,
https://www.legis.md/cautare/getResults?doc_id=147597&lang=ro#
- [4] Law no. 98/2022 on ambient air quality,
https://www.legis.md/cautare/getResults?doc_id=137491&lang=ro#
- [5] Law no. 272/2011 – Water Law,
https://www.legis.md/cautare/getResults?doc_id=152471&lang=ro#
- [6] Law no. 1538/1998 on Natural areas protected by the State,
https://www.legis.md/cautare/getResults?doc_id=141074&lang=ro#
- [7] Law no. 94/2007 National Ecological Network,
https://www.legis.md/cautare/getResults?doc_id=133945&lang=ro#
- [8] Law no. 325/2005 related to the Republic of Moldova Red Book,
https://www.legis.md/cautare/getResults?doc_id=141079&lang=ro#
- [9] Law no. 439/1995 on Fauna,
https://www.legis.md/cautare/getResults?doc_id=151333&lang=ro#
- [10] Law no. 239/2007 on Flora,
https://www.legis.md/cautare/getResults?doc_id=152866&lang=ro#
- [11] Law no. 1530/1993 on cultural heritage protection,
https://www.legis.md/cautare/getResults?doc_id=137389&lang=ro#
- [12] Law no. 218/2010 on archaeological heritage protection,
https://www.legis.md/cautare/getResults?doc_id=150484&lang=ro#
- [13] Law no. 148/2023 on access to information of public interest,
https://www.legis.md/cautare/getResults?doc_id=137924&lang=ro#
- [14] Law no. 239/2008 on transparency in decision-making,
https://www.legis.md/cautare/getResults?doc_id=142655&lang=ro#
- [15] Law no. 186/2008 on Occupational Health and Safety, with subsequent amendments,
https://www.legis.md/cautare/getResults?doc_id=151092&lang=ro#
- [16] Labour Code of Republic of Moldova no. 154/2003,
https://www.legis.md/cautare/getResults?doc_id=151096&lang=ro#
- [17] National Collective Agreement no. 8/2007 on elimination the worst forms of child labour,
https://www.legis.md/cautare/getResults?doc_id=86453&lang=ro

- [18] Law no. 278/1999 on how to recalculate the amount of compensation of the damage caused to employees after mutilation or other health injuries during the performance of duties, https://www.legis.md/cautare/getResults?doc_id=131983&lang=ro#
- [19] Law no. 289-XV/2004 on invalidity allowances on temporary work incapacity benefits and other social security benefits, https://www.legis.md/cautare/getResults?doc_id=151180&lang=ro#
- [20] Law no. 756/1999 on insurance for work accidents and occupational diseases, https://www.legis.md/cautare/getResults?doc_id=151189&lang=ro#
- [21] Law no. 116/2012 on industrial safety of hazardous industrial facilities, https://www.legis.md/cautare/getResults?doc_id=137456&lang=ro#
- [22] GD no. 906/2020 for approval of minimum health and safety requirements for the use by workers of personal protective equipment, https://www.legis.md/cautare/getResults?doc_id=124931&lang=ro
- [23] GD no. 1101/2001 for approval the regulation related to the disability allowance for accidents at work or professional diseases, https://www.legis.md/cautare/getResults?doc_id=124737&lang=ro
- [24] GD no. 513/1993 for approval the regulation on the payment to companies, organizations, and institutions of the single allowance for the loss of working capacity or death of the employees following an accident at work or an occupational disease, https://www.legis.md/cautare/getResults?doc_id=83948&lang=ro
- [25] GD no. 357/2018 on the determination of disability, https://www.legis.md/cautare/getResults?doc_id=144885&lang=ro#
- [26] Law no. 186-XVI/2008 on occupational health and safety https://www.legis.md/cautare/getResults?doc_id=151092&lang=ro#
- [27] GD no. 95/2009 for approval norms related to the implementation of occupational health and safety Law no. 186-XVI/2008, https://www.legis.md/cautare/getResults?doc_id=145415&lang=ro
- [28] GD no. 1487/2004 for approval of the list of standard works and jobs in difficult and very difficult conditions, harmful and particularly harmful for which compensations are established for employees, https://www.legis.md/cautare/getResults?doc_id=77937&lang=ro

- [29] GD no. 168/1993 for approval the regulation on jobs attested for the confirmation of the right of pensions in advantageous conditions,
https://www.legis.md/cautare/getResults?doc_id=83717&lang=ro
- [30] GD no. 353/2010 for approval of minimum occupational health and safety requirements at work;
- [31] GD no. 765/2008 on the State Inspectorate for Industrial Facilities Technical Surveillance, https://www.legis.md/cautare/getResults?doc_id=151785&lang=ro
- [32] GD no. 937/2010 amending item 2 of the Regulation on the evaluation of working conditions at work and method of applying works lists by branches,
https://www.legis.md/cautare/getResults?doc_id=21179&lang=ro
- [33] GD no. 852/2024 for approval of the Regulation on the protection of zones electrical networks, https://www.legis.md/cautare/getResults?doc_id=146470&lang=ro
- [34] Land use Code no. 22/2024,
https://www.legis.md/cautare/getResults?doc_id=152735&lang=ro#
- [35] Law no. 488/1999 on expropriation in case of public utility,
https://www.legis.md/cautare/getResults?doc_id=147849&lang=ro#
- [36] Law no. 1308/1997 on normative price for land and sale/purchase procedure,
https://www.legis.md/cautare/getResults?doc_id=148859&lang=ro#
- [37] Forest Code no. 69/2024,
https://www.legis.md/cautare/getResults?doc_id=142948&lang=ro
- [38] GD no. 553/2024 for the approval of the Regulation on the change of land use for high-quality agricultural lands,
https://www.legis.md/cautare/getResults?doc_id=150820&lang=ro

Strategic and Project-Specific Documents, RO & MD

- [1] Memorandum Of Understanding, December 11, 2023, between the Government of Romania and the Government of the Republic of Moldova on the implementation of projects necessary for the interconnection of natural gas and electricity networks in Romania and the Republic of Moldova, <https://legislatie.just.ro/Public/DetaliiDocument/279687>
- [2] Network Development Plan 2024 – 2033, CN Transelectrica, RO,
<https://web.transelectrica.ro/noutati/noutati/word/PPDRET%202024-2028-2033.pdf>

- [3] Transmission Network Development Plan for 2021-2030, I.S. Moldelectrica, MD
[https://www.moldelectrica.md/files/docs/TYNDP%202025-2034%20\(RO\).pdf](https://www.moldelectrica.md/files/docs/TYNDP%202025-2034%20(RO).pdf)

Environmental, biological and socio-economic references

Romania

- [1] National Inventory Document, Romania's Greenhouse Gas Inventory 1989-2023,
<https://unfccc.int/documents/646456>
- [2] Romania Annual Environmental Report, 2024, National Agency for Environment and Protected Areas, <https://anmap.gov.ro/wp-content/uploads/2025/10/Raport-anual-privind-Starea-Mediului-in-Romania-pe-anul-2024-1.pdf>
- [3] Annual Environmental Bacău County Report, Bacău County Environmental Directorate, 2024, <https://djmbc.anmap.gov.ro/19-2-raport-anual-de-mediu-2/>
- [4] Annual Environmental Vaslui County Report, Vaslui County Environmental Directorate, 2024, <https://djmvvs.anmap.gov.ro/raport-anual-privind-starea-mediului-in-judetul-vaslui/>
- [5] Annual Environmental Iași County Report, Iași County Environmental Directorate, 2024, <https://djmis.anmap.gov.ro/rapoarte-anuale-2000-2022/>
- [6] Air quality website – monitoring stations included in the National Network for Monitoring Air Quality, https://www.calitateaer.ro/public/home-page/?_locale=ro
- [7] European Soil Data Center (ESDAC), Soil Erosion Database, Joint Research Centre, European Commission, <https://esdac.jrc.ec.europa.eu/>
- [8] European Landslide Susceptibility Map (ELSUS v2), European Soil Data Centre (ESDAC), Joint Research Centre (JRC)
- [9] Updated Siret River Basin Management Plan 2022-2027, Siret River Basin Administration, <https://rowater.ro/activitatea-institutiei/departamente/managementul-european-integrat-resurse-de-apa/planurile-de-management-ale-bazinelor-hidrografice/>
- [10] Updated Prut-Bârlad River Basin Management Plan 2022-2027, Prut-Bârlad River Basin Administration, <https://rowater.ro/activitatea-institutiei/departamente/managementul-european-integrat-resurse-de-apa/planurile-de-management-ale-bazinelor-hidrografice/>
- [11] Flood Risk Maps (2nd Cycle),
<https://harticiclul2.inundatii.ro/map@46.3324070,26.7718807,8z>
- [12] Natura 2000 Viewer website, EEA, https://natura2000.eea.europa.eu/?page=Page-1&views=Countries_View

- [13] Birdlife International website, Data zone – Romania, <https://datazone.birdlife.org/country/romania>
- [14] National Institute of Statistics, including Statistical Yearbooks, <https://insse.ro/cms/en>
- [15] Official Census, <https://www.recensamantromania.ro/>
- [16] Cartographic Server for the National Cultural Heritage, <https://map.cimec.ro/Mapserver/>
- [17] Historical monuments List 2015, <https://patrimoniul.ro/ro/articles/lista-monumentelor-istorice>

Moldova

- [1] Monitoring Program on the territory Republic of Moldova, 2024, <https://am.gov.md/sites/default/files/document/attachments/Program%20de%20monitorizare%20a%20LRM%2C%202024.pdf>
- [2] Natural Resources and the Environment in the Republic of Moldova Statistical Publication, 2025 Edition, https://statistica.gov.md/en/natural-resources-and-environment-in-republic-of-moldova-editions-2010-2025-9688_59475.html
- [3] Annual Report regarding the quality of environmental components monitored by the Environmental Reference Laboratory, 2021, <https://am.gov.md/ro/content/rapoarte-anuale-privind-starea-mediului>
- [4] Republic of Moldova's first Biennial Transparency Report, 31 December 2024, <https://unfccc.int/sites/default/files/resource/BTR1-EN-270125.pdf>
- [5] Fifth National Communication of the Republic of Moldova, 2023, <https://unfccc.int/documents/627100>
- [6] Statistical Yearbook of the Republic of Moldova, edition 2025, National Bureau of Statistics of Republic of Moldova, https://statistica.gov.md/en/buletin-statistic-trimestrial-editiile-2005-2021-9877_59482.html
- [7] 2023 IPM Annuary – “Protection of the environment in the Republic of Moldova”, https://ipm.gov.md/upfiles/menu_files/ANUARUL%202024.pdf
- [8] Natural Resources and Environment, 2023, National Bureau of Statistics of Republic of Moldova https://statistica.gov.md/files/files/publicatii_electronice/Mediu/Resursele_naturale_editia_2023.pdf

- [9] MD Environmental Agency website, Protected areas, <https://am.gov.md/ro/content/d1-arii-protejate>
- [10] National Ecological Network maps, Biotica Ecological Society & IUCN, <https://www.bioticamoldova.org/storage/files/14H%C4%83r%C8%9Bile%20Re%C8%9Bei%20Ecologice%20Na%C8%9Bionale%20R.%20Moldova.pdf>
- [11] Cadastre of Protected Natural Areas, Institute of Ecology and Geography, <https://ieg.md/cadastrul-ariilor-protejate>
- [12] Emerald Network Reference Portal, <https://rm.coe.int/draft-list-of-adopted-emerald-network-sites/1680ad54a1>
- [13] BirdLife International website, Data zone - Moldova, <https://datazone.birdlife.org/country/moldova/ibas>
- [14] Forest resources, Moldsilva, <https://moldsilva.gov.md/pageview.php?l=ro&idc=180&t=/Fondul-forestier-national/Resursele-forestiere>
- [15] National Institute of Statistics, including Statistical Yearbooks, <https://statistica.gov.md/en>
- [16] National Geospatial Data Fund, <https://geoportal.md/ro>
- [17] Ministry of Culture, <https://mc.gov.md/ro/content/monumente-de-public>