



**Moldelectrica**



# **Moldova-Romania Power Interconnection Project Feasibility Study**

**Part 2: Feasibility assessment and ESIA of the 2<sup>nd</sup> priority project**

**Back to back station and OHL 400 kV Balti-Suceava**

**Task 10: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDY  
Land Acquisition and Compensation Framework - LACF**

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		<b>Elaborated by</b>	<b>Checked by</b>	<b>Approved by</b>
Environment Impact		PhL. Eng. Oana FALUP	Eng. Irene SAMOILA	PhD. Eng. Claudia TOMESCU
Environment Impact		PhD. Eng. Valentin RUSU		
Social Impact		Eng. Gloria POPESCU		
Social Impact		PhD. Soc. Mathias GUSTAVSSON		

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## Table of Content

1. INTRODUCTION	3
2. PROJECT DESCRIPTION	3
2.1. The Project Location	9
2.2 Alternative Project Locations	11
2.2.1 OHL Routes Alternative	11
2.2.2 The BtB substation location alternatives	18
2.3 Project Land Needs	20
2.3.1 Temporary land acquisition	21
2.3.2 Permanent land acquisition	22
2.4 Impacts associated with the land acquisition	22
3. LEGAL AND REGULATORY FRAMEWORK	24
3.1 Republic of Moldova Legislation	24
3.1.1 Land use categories and re-categorisation	25
3.1.2 Expropriation on the Ground of the Public Utility	26
3.2 IFI's Requirements Pertinent to Land Acquisition and Involuntary Resettlement	29
3.2.1 EBRD	29
3.2.2 EIB	29
3.2.3 Key IFI requirements pertaining to land acquisition and resettlement	30
3.3 Moldova's Legislation versus IFI Requirements: Main Similarities, Differences and Gaps	37
4. KEY PRINCIPLES, APPROACH AND PROCESS	41
4.1. Key principles	41
4.2 Overview of the Process	42
4.2.1. Declaration of Public Utility	42
4.2.2. Establishing the cut-off date	43
4.2.3. Socio-economic Survey	43
4.3. Census of the RAPs and Assets' Inventory	43
4.4 Compensations	44
4.5 Methods of valuing assets	45
5. DISCLOSURE OF INFORMATION, PARTICIPATION AND CONSULTATION	46
6. GRIEVANCE REDRESS MECHANISM	47
7. LACF IMPLEMENTATION, BUDGET, MONITORING AND REPORTING	47

## 1. INTRODUCTION

In 2009, the Republic of Moldova (Moldova) joined the Energy Community Treaty that extends the EU energy policy to the South-East Europe and, in 2010, it signed the Accession Protocol. As part of the Energy Community Treaty, Moldova has unique advantages such as integration into European energy market, joining the ENTSO-E, investments opportunities.

The integration of Moldova's energy market into the European energy market assures a real competition and transparent and equitable prices. Further, the security of supply is expected to enhance through diversification of market participants.

In 2015, Moldova approved *the roadmap for energy sector*. Its work package 3 *Promoting the energy infrastructure investment projects*, point "a" *Presentation of priority projects with the European Union (Romania)*, specifies the **"Back to back" station and OHL 400 kV Balti-Suceava** project as a priority development. The project implementation will ensure a high level of energy security for Moldova and its integration in the European energy market.

The European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB) (further together referred to as 'International Financial Institutions', or IFIs) are considering providing finances to the state enterprise MOLDELECTRICA ('the Company') for the design and construction of a 'back-to-back' station and a 400 kV overhead transmission line (OHL) from Balti to Suceava ('the Project').

Following the requirements of the IFIs, the Company developed the Project Feasibility Study and ESIA package, including:

- Environmental and Social Impact Assessment (ESIA);
- Environmental and Social Action Plan (ESAP);
- Environmental and Social Monitoring and Management Plan (ESSMP);
- Stakeholder Engagement Plan (SEP);
- Land Acquisition and Compensation Framework (LACF) and,
- Non-Technical Summary (NTS).

The Project implementation requires land acquisition. This LACF aims at establishing the objectives, principles and processes for land acquisition, compensation, economic displacement, and livelihood restoration. At the later stages of Project planning, it will be necessary to develop a detailed Land Acquisition and Compensation Plan (LACP).

## 2. PROJECT DESCRIPTION

The Project includes the following key features:

- New 400 kV OHL Bălți –Suceava route;
- New BtB Bălți station near the existing 330/110/10.5 kV Bălți station to be connected to the existing 330/110/10.5 kV Bălți station and 330 kV connection between BtB Bălți station and existing 330/110/10.5 kV Bălți station;
- Modification within the existing 330/110/10.5 kV Bălți station, consisting in extension of the station diagram with a new line cell with 2 breakers per circuit.

The Project will involve the construction, supply of equipment and placing into operation of: (i) a new BtB station near the existing 330/110/10.5 kV Bălți station; (ii) a 400 kV transmission line between the existing 400/110/20 kV Suceava (România) station and the 330/110 kV Bălți station; (iii) the extension of the existing 330/110/10.5 kV Bălți station involving a new line cell with 2 circuit breakers.

Since the 400 kV OHL Bălți – Suceava route crosses the 110 kV OHL Balatia – Moara Domneasca and 110 kV OHL Bălți – Făleşti routes, for ensuring the imposed electrical clearance with crossed 110 kV OHLs, new towers with lower height than the existing one shall be installed.

For crossing of the existing low voltage lines, the 400 kV towers with bigger height shall be used in order to ensure the electrical clearance imposed by the norm, without any change of the low voltage lines.

In Moldova, the covering of electricity consumption is assured by electricity import and the electricity generated by power plants on the right bank and on the left bank of Nistru (Dniester) River. In the electricity network, the electricity generated and delivered by domestic production remains well below the level of consumption, indicating an increased vulnerability of the national electricity sector.

The achievement of the Project **“Back to Back (BtB) Bălți station and 400 kV OHL Bălți – Suceava” - component B of the Moldova – Romania Power Interconnection Project** will lead to the significant improvement of the electricity supply security of consumers at affordable prices, considering the participation to the single European electricity market.

The Project will involve the construction, supply of equipment and putting into operation of: (i) a new BtB station near the existing 330/110/10.5 kV Bălți station; (ii) a new 400 kV transmission line between the existing 400/110/20 kV Suceava (România) station and the 330/110/10.5 kV Bălți station (Moldova); (iii) the extension of the existing 330/110/10.5 kV Bălți station, involving a new line cell with 2 circuit breakers (thereafter referred as the **“Project”**).

The total Project cost is estimated at **127,045.238 thousand EUR** and financing is expected to be provided by the European Bank for Reconstruction and Development (“EBRD”) and by the European Investment Bank (“EIB”).

### **OHL towers**

The OHL towers for the 400 kV OHL Bălți - Suceava route will be self-supporting latticed steel towers, suspension, and tension types. Depending on their position on the OHL route, the types of towers will be:

- Suspension towers, used for straight section of the line;
- Angle (tension) towers used where the line changes direction;
- Terminal towers, in BtB Bălți station.

The proportion of angle towers is about 24 % of the total number of towers erected along the OHL route.

The steel towers proposed to be used are latticed steel structures made of laminated steel for bolted constructions, with standard height up to conductor clamp point between 21.6 ÷ 27 m (21.6 m in case of angle towers and 27 m in case of suspension towers).

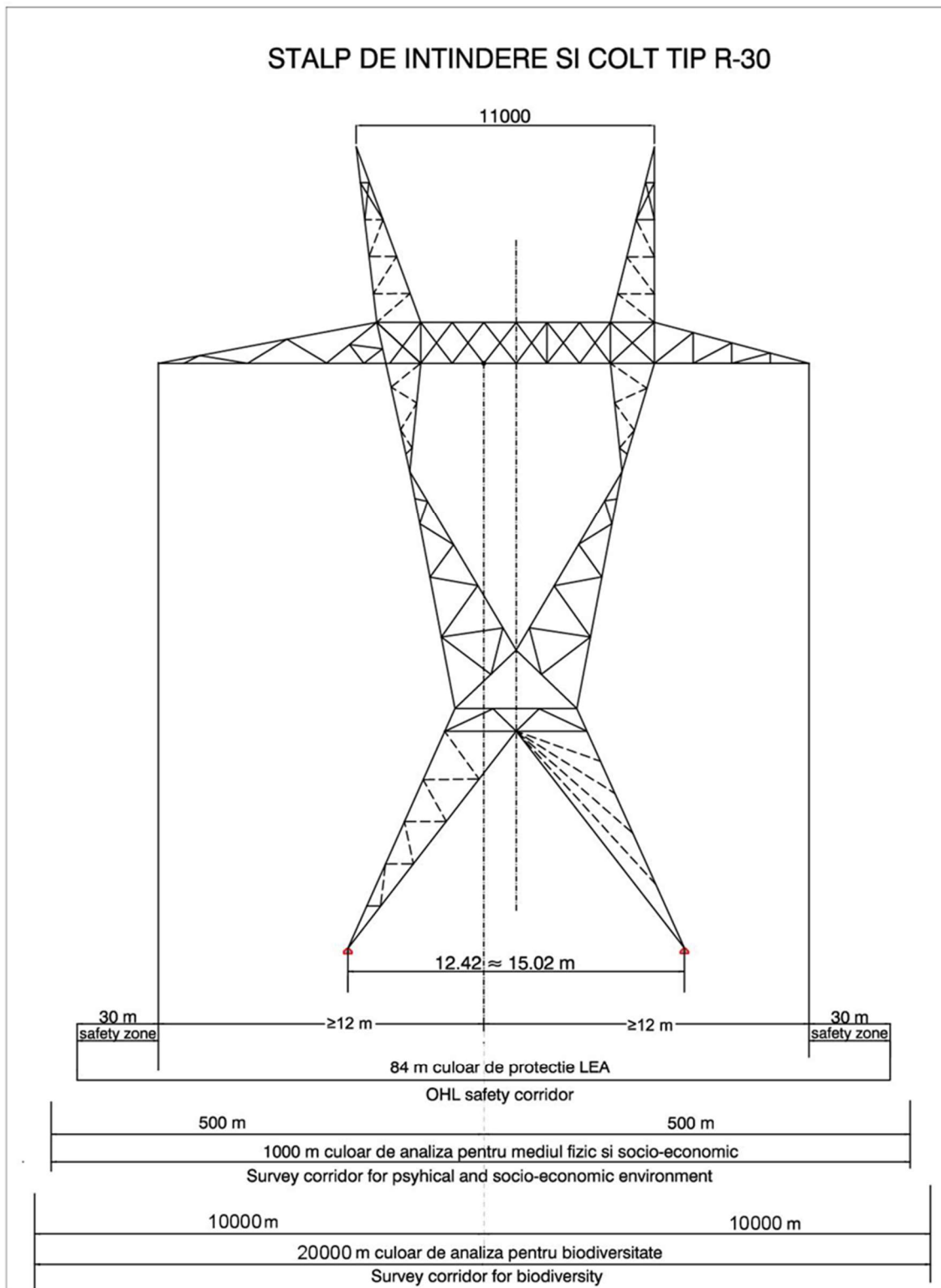
At crossings over OHLs, national roads, the crossing towers provided are tension towers equipped with insulator strings with multiple columns.

Steel towers will be equipped with support for identification plates, support for number and support for warning plates. Supports for aerial numbering could be installed on the top of the suspension and/or angle towers.

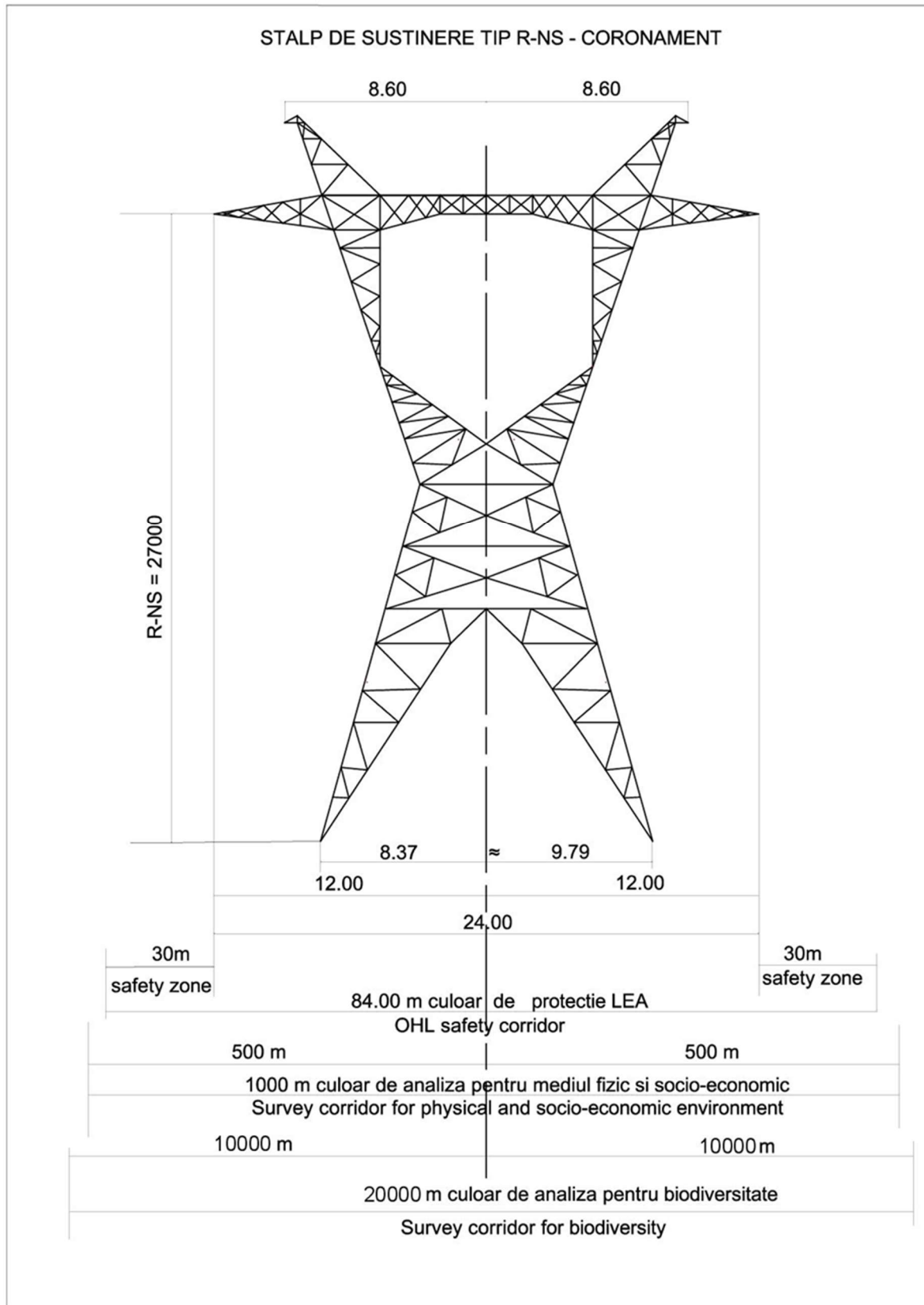
Overall dimensions electrical distances are complying with the provisions of the current design norm related to electrical installations.

Towers anti-corrosive protection will be made by zinc coating (thermal covering system – TC) executed in the factory not on site.

The configurations of suspension and tension towers, as well as the corridors used for the baseline and impact assessments, are presented in the figure below. The towers height depends on the topography and objects crossed by the OHL route. The types of towers (tension and suspension towers) to be used for 400 kV OHL Bălți - Suceava are presented in **Figure no. 1**.



**Figure no 1 a. Tension tower type R-30 (front view)**



**Figure no.1 b. Suspension tower type R-NS (front view)**

**Figure no. 1. Tension (a) and suspension (b) towers for 400 kV OHL Bălți - Suceava**



The **BtB Bălți station** will consist, from a technological point of view, of:

- The 400 kV outdoor substation to the national power grid of RO (with input from the new OHL to Suceava).
- The 330 kV outdoor substation to the power grid of MD.
- The Control room for BtB Bălți station, common with the 400 kV and 330 k V outdoor substations to RO and MD power grids.
- The HVDC (High Voltage Direct Current) installation module, VSC (Voltage Source Converter) type, rated at 300 MW power.
- The interface transformers on both sides of the converter (400/110 KV and 330/110 kV).

The HVDC installation has two ends, located in the same room, one that performs the AC to DC conversion and the other that performs the DC to AC conversion. The converter base unit/battery is a multi "valve" bridge (containing several IGBT = insulated gate bipolar thyristor modules).

The valves can be mounted on the floor or suspended from the roof of the building, depending on the construction solution chosen by the supplier, considering the earthquake risk of the area. The room will have an internal metal screen over all walls, roof, and floor. This screen creates a Faraday cage to stop electromagnetic interference generated by the operation of valves.

Inside the room, between the two ends of the converter, a DC installation is made, consisting of capacitors, damping DC coils, capacitive dividers, dischargers, disconnectors, resistors, etc.

Capacitors provide a low impedance path for the switched-off current, store energy to properly control the power flow and reduce surge on the DC side.

The damping DC coils provide DC undulation current reduction on the OHL or cable, reduction of the maximum potential breakdown current, resonance modification on the DC side of the diagram at frequencies that are not multiples of the fundamental AC frequency, and protection of the valves from fast-front transients. The coils are usually large, air-insulated coils and are mounted, depending on the supplier, in or outside the converter room.

The valves are permanently cooled using a forced cooling system. Cooling with ultra-pure deionised water, with no electrical conductivity, shall be used. The installation shall include a tank, included in the supply.

The cooling system, with ultra-pure deionized water, includes the following components: filtering system; de-ionization system; circulation pumps; heat exchangers (coolers); by-

pass circuit; expansion tank; make-up system (make-up liquid tank, make-up liquid pump, deionisation unit, filter, conductivity metering).

Interface transformers are provided between the BtB station circuits and those of the substations connecting to the electrical power grid systems, providing several functions, including:

- Galvanic insulation between AC and DC systems.
- Stable modification of the AC voltage, via the tap changer, depending on the operating conditions of the converter.
- Creating a breakdown limiting impedance.

The two interface transformers will be 3-phase. The voltage at the secondary and tertiary terminals will be set by the BtB station supplier (usually between 110 kV and 220 kV). The tertiary of the transformers, one to the power grid system of RO and the other to the power grid system of MD, will be used to supply the station AC in-house services.

The transformers will be equipped with all the necessary accessories, including monitoring equipment and installations for the prevention of tank explosion and fire, with nitrogen (and related accessories).

Single-phase damping coils are provided between each transformer and converter to control active and reactive power flow by balancing the current flow through them. The coils also serve as AC filters, reducing the high-frequency harmonic content of AC currents that occur during switching operation of IGBT transistors.

Normally, the current harmonics generated by VSCs are negligible and therefore, in this case, additional AC harmonic filters are not required.

Near the converter room, the Control room building will be located, containing the control room, the in-house services room, the cooling plant room, the accumulator batteries, workshops, offices.

The Control room is equipped with the following indoor installations: electrical lighting and power installations; electrical heating installations; air-conditioning installations; natural ventilation installations; indoor sanitary installations (water and drainage); inert gas firefighting installations; water supply system; firefighting first response facilities.

## **2.1. The Project Location**

The present Project for assuring the asynchronous interconnection between the power system of MD with the power system of RO includes the 400 kV Bălți – Suceava route (48 km), the new BtB Bălți station and modification of existing Bălți station.

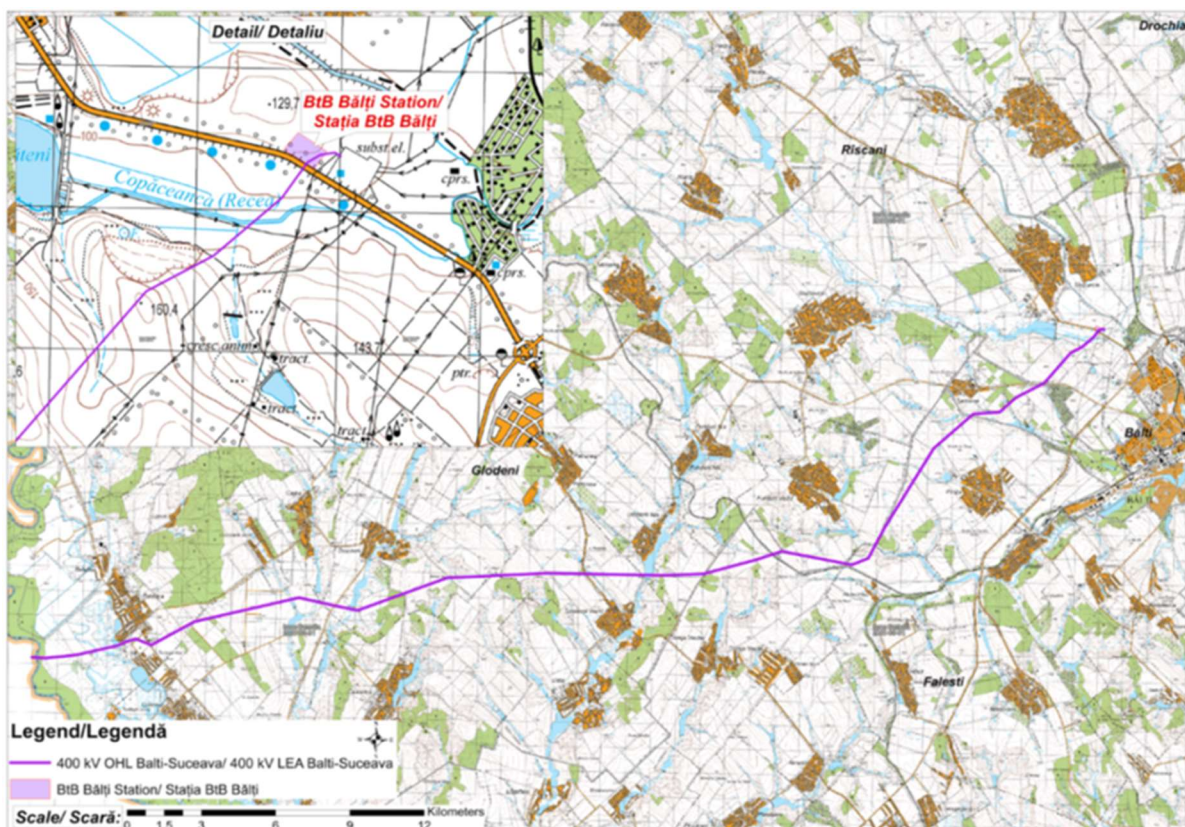
The 400 kV OHL route starts from the terminal tower of the 400 kV OHL located on the RO territory and crosses the northern part of MD, namely the following districts / municipality: Glodeni district (Balatina and Cuhnești communes, villages: Dușmani, Ciuciulea, Limbenii Vechi, Limbenii Noi and Fundurii Vechi); Fălești district (Obreja Veche and Hiliuți communes and Pîrlita village); Râșcani district (Corlă village); Bălți municipality (Sadovoe village).

After crossing the Prut River, the OHL route oriented to the East goes between Balatina and Tomeștii Noi localities, by-passing to the South the Clococenii Vechi and Dușmani localities, then passes between Limbenii Noi and Limbenii Vechi localities, respectively Pârlița and Fundurii Vechi localities. The route continues South from Sadovoe, crosses the M5 (E581) express road and enters into the BtB Bălți station.

The existing 330/110/10.5 kV Bălți substation is situated at about 1.57 km on the north-northwest direction of Bălți municipality, on the right side of the M5 (E581) express road: Border with Ukraine - Criva - Bălți - Chisinau - Tiraspol - border with Ukraine. The distance is measured from the substation to the outskirts of the city (last household).

The new BtB Bălți station will be integrated on the new 400 kV OHL Bălți – Suceava route, on a free land of approximately 4 ha, located near the existing 330/110/10.5 kV Bălți substation.

The Project location is presented in Figure 2.



**Figure 2 Project Location**

## 2.2 Alternative Project Locations

### 2.2.1 OHL Routes Alternative

The present chapter includes the analysed alternatives for the OHL route, namely:

- “Do nothing” alternative
- Considered alternatives for the OHL route
- Multicriteria analysis for OHL route selection
- Considered alternatives for BtB substation location
- Comparison analysis for BtB substation location selection.

#### “Do nothing” alternative

The “Do nothing” alternative considers that the proposed Project will not be developed.

The proposed project, BtB Bălți station and 400 kV OHL Bălți - Suceava (Romania), is included as priority project in the MD Energy Roadmap, approved in 2015, work package 3 **Promoting the energy infrastructure investment projects**, point “a” **Presentation of priority projects with the European Union (Romania)**. The project’s implementation will ensure a high level of security for MD and integration in the European energy market, according to the Energy Strategy 2030 adopted in 2013 by the Government of MD.

By non-implementation of the Project, several potential environmental impacts at local scale would be completely avoided such as: noise (due to road traffic and construction activities), restrictions affecting local land use within the safe zone of OHL route, visual-aesthetic impacts of towers and conductors, etc.

The “Do nothing” alternative would avoid the potential negative environmental and social impacts during the construction and operational stages but, on the other hand, will prolong the current situation of lack of security of supply of MD and affect the following aspects:

- The integration of MD energy market with ENTSO-E and the European energy market, with negative consequences for fair, transparent and equitable prices and competition in the Moldovan electricity market;
- The enhancement and diversification of the security of supply of electricity in the MD, which is currently dependent on imports from Ukraine and Transnistria, through diversification of market participants; and
- Ensuring the generation-consumption balance when variations of electricity generation of internal power plants occur, especially of renewable power plants, whose operation schedule is less predictable.

## Considered alternatives for the OHL route

The selection of the optimum OHL route was performed both from technical and financial standpoint and to reduce the visual impact of OHL, also considering the coexistence with the current and/or future objectives.

The general principles in designing an OHL route are to avoid as much as is possible the following areas:

- Populated areas
- Forested areas and implicitly avoid deforestations
- Farming lands with vineyards and orchards
- Parks and natural reserves
- Geologically unstable areas
- Special landscape or with an architectural and historical value.

Three route options were analysed to find an optimal route for the proposed OHL:

- Option 1, Red route, North
- Option 2, Purple route, Central
- Option 3, Blue route, South.

### Option 1, Red route

The 400 kV OHL route starts from the terminal tower of the 400 kV OHL located on the RO territory, crosses the Prut River and then taking the direction to the North, by-passing the Balatina, Cobani, Buteni, Moleşti and Camenca towns. After the Camenca locality, the OHL route is oriented to the East and then goes North to the Camencuţa, Daniu, Nicolaevca, Iabloana and Sturzovca localities. The route continues North from Sadovoe, crosses the M14 highway and enters the BtB Bălţi station.

In Option 1, the length of 400 kV OHL Bălţi - Suceava route on the territory of MD is about 63km.

### Option 2, Purple route

The 400 kV OHL route starts from the terminal tower of the line located on the territory of RO, crosses the Prut River and then takes the eastbound route, passing through the Balatina and Tomeştii Noi localities, bypassing to the South the Old Clococeni and the

Dusmani localities and then between the Limbenii Vechi and Limbenii Noi localities, respectively Parlita and Fundurii Vechi localities. The route continues South from the Sadovoie town, crosses the Magistral M14 road and enters into the BtB Bălți station.

In Option 2, the length of 400 kV OHL Bălți - Suceava route on the territory of MD is about 48km.

### Option 3, Blue route

The 400 kV OHL route starts from the terminal tower of the line located on the territory of RO, crosses the Prut River and then, taking the South-East orientation, passes through Sergheieni and Cuhnești towns, bypassing on the North-East the Moara Domnească, Viișoara and Chetrișul Nou localities. The route then passes between the Logofteni and Moldovanca localities, respectively between Obreja Nouă and Ilenuța localities. The route then becomes common with option 2, from the Pârlița locality until the entrance to the Bălți station.

In Option 3, the length of 400 kV OHL Suceava - Balti route on the territory of MD is about 58km.

The OHL route options are presented in **Figure no. 3**.



**Figure no. 3. 400 kV Bălți - Suceava OHL route options**

The objectives crossed by analysed 400 kV OHL routes, respectively the crossings in relation with the existing infrastructure and natural protected areas, are presented in **Table no. 1**.

**Table no. 1. Objects crossed by the analysed OHL routes**

No.	Indicators	Option 1, Red route	Option 2, Purple route	Option 3, Blue route
1.	Route length, km	63	48	58
2.	Crossed OHLs: - 400 kV - 330 kV - 110 kV - 35 kV	- - 1 -	- - 2 -	- - 2 -
3.	Crossed railways	-	South – southwest of Funduri Vechi village	North of Râulețul Nou village
4.	Crossed roads: - express - regional - local	<b>6</b> 1 3 2	<b>7</b> 1 4 2	<b>8</b> 1 4 3
5.	<i>National Ecological Network</i>			
	➤ International ecological corridor Prut	yes	yes	yes
	➤ Proposed ecological corridor	much more	less	more
	➤ International core area “Pădurea Domnească” (Emerald site, scientific reservation, IBA)	less	more	much more
	➤ National core area “Suta de Movile” (RP)	in the survey corridor	-	-
	➤ Natural Area Protected by the State: RS “Pădurea Domnească”	much more	more	less
	➤ Emerald network (2)	less	more	much more
	➤ IBA sites (1)	less	more	much more
	➤ Ramsar sites	-	-	-
6.	Migratory birds routes	yes	yes	yes
7.	Water courses	9	5	10
8.	Lakes	1	-	-
9.	Productive land (crops, orchard and fruit shrubs)	much more	more	more
10.	Localities at distance ≤ 500 m from OHL axis	less (3 localities)	more (4 localities)	much more (6 localities)
11.	Cultural objects <sup>1</sup> in localities at distance ≤ 500 m from OHL axis	more (3 x historical <sup>2</sup> , 2 x architectural, 2 x archaeological)	less (3 x historical, 2 x architectural, 1 x archaeological)	much more (6 x historical, 3 x architectural, 4 x archaeological)
12.	Archaeological sites in localities at distance ≤ 100 m from OHL axis	Much more (9 archaeological sites)	more (5 archaeological sites)	less (3 archaeological sites)

<sup>1</sup> Historical, architectural or archeological monuments

<sup>2</sup> Attention! OHL crosses above an historical monument near Cobani village

### **Multicriteria analysis for OHL route selection**

The multi - criteria analyses performed for selection the optimum 400 kV OHL Bălți – Suceava route option considered the following technical, socio – economic and environment aspects:

- Technical-economic aspects:
  - ✓ Length of the line
  - ✓ Number of special towers
  - ✓ Number of special foundations (the nature of the foundation soil)
  - ✓ Presence of polluting or aggressive areas on the route
  - ✓ Co-existence with other objectives (roads, railways, water streams, OHLs, telecommunication lines, pipes, etc.)
  - ✓ Route accessibility (level of difficulty)
  - ✓ Investment costs
- Environmental and socio-economic aspects:
  - ✓ Crossing highly productive areas (farmlands, fruit trees and trees)
  - ✓ Visual impact
  - ✓ Crossing protected areas and forests
  - ✓ Crossing the urban areas.

The optimum 400 kV OHL Bălți – Suceava route option have been established considering the technical-economic criterion and the environmental and socio-economic criterion, in equal share (50%).

Within the technical-economic criterion, the five defined indicators are weighted depending on their importance in making the decision regarding the OHL route line.

Within the environmental and socio-economic criterion, the four defined indicators are weighted, depending on their importance in making the decision regarding the OHL impact on the environment and socio-economic factors.

A mark will be assigned for each indicator, as follows:

- 3 - for the best solution
- 2 - for the average solution
- 1 - the most unfavourable solution.

The optimum OHL route option is corresponding to the option with the closest score to mark 3.

The length of the line is the main technical-economic indicator that, basically, has the greatest impact on the investment values.

Consequently, the optimum 400 kV OHL route shall be as close to the straight line joining the end points: RO – MD border, respectively the Bălți station.



The analysed route options considered the line length indicator, which has the greatest impact on investment values. The deviations from the right line are due to natural obstacles, existing/proposed objectives, and environmental issues.

This indicator is quantified through the percentage of exceeding the length of the route option, as compared to the straight line, which is 44.5 km.

According to this indicator, percentages are the following:

- Option 1, Red route: 141.57% longer than the straight-line option (63 km OHL);
- Option 2, Purple route: 107.86% longer than the straight-line option (48 km OHL);
- Option 3, Blue route: 130.33% longer than the straight-line option (58 km OHL).

The assessment of the indicators, considering the 400 kV OHL Bălți – Suceava route options is presented in **Table no. 2**.

**Table no. 2. The multicriteria analysis for 400 kV OHL Bălți – Suceava route options**

CRITERION	SPECIFIC INDICATORS	Weight of indicators as part of the criterion	Option 1, Red route		Option 2, Purple route		Option 3, Blue route	
			Rating	Weighted average	Rating	Weighted average	Rating	Weighted average
TECHNICO-ECONOMIC	Length of the line	15%	1	0.15	3	0.45	2	0.30
	Percentage of special towers	15%	2	0.30	3	0.45	1	0.30
	Nature of the foundation soil (geological stability)	15%	2	0.30	3	0.45	3	0.45
	Accessibility of the route (difficulty level)	20%	1	0.20	3	0.60	2	0.40
	Coexistence with objectives	35%	2	0.70	2	0.70	2	0.70
	<b>Total technical and economic criterion</b>	<b>100%</b>		<b>1.65</b>		<b>2.65</b>		<b>2.15</b>
ENVIRONMENTAL and SOCIO-ECONOMIC	Occupying highly productive areas	20%	1	0.20	3	0.60	2	0.40
	Visual impact	10%	2	0.20	3	0.30	1	0.10
	Crossing archeological sites	10%	3	0.30	2	0.20	1	0.10
	Crossing protected areas	30%	2	0.60	3	0.90	1	0.30
	Crossing settlements' built areas	30%	3	0.90	2	0.60	1	0.30
	<b>Total environmental criterion</b>	<b>100%</b>		<b>2.2</b>		<b>2.6</b>		<b>1.2</b>
<b>MCA Result</b>				<b>1.925</b>		<b>2.625</b>		<b>1.675</b>

The results of the multi-criteria analysis indicate Option 2, Purple route as optimum option for the 400 kV OHL Vulcănești – Chișinău, as presents the following advantages compared with options 1 and 3:

- Technical-economic criterion:
  - ✓ Shortest length
  - ✓ Accessible route.
- Socio-economic and environmental criterion:

- ✓ Lowest visual impact
- ✓ Less impact on protected areas
- ✓ Less impact on highly productive lands.

According with the results obtained, **the Option 2, Purple route is the optimum option for the 400 kV OHL Bălți – Suceava route.**

The hierarchy of the proposed OHL route options is presented in **Table no. 3.**

**Table no. 3. Hierarchy of OHL route options by sections**

Route option	Weighted average	Place
<b>Option 2, Purple route</b>	2.625	<b>1</b>
<b>Option 1, Red route</b>	1.925	<b>2</b>
<b>Option 3, Blue route</b>	1.675	<b>3</b>

To demonstrate that the hierarchy is correct, a sensitivity analysis has been performed for the proposed criteria, considering different shares for the two criteria, thus 40% - 60% and 60% - 40%. The results of the sensitivity analysis are presented in **Table no. 4.**

**Table no. 4. Hierarchy of OHL route options, based on the sensitivity analysis**

Route options	Hypotheses					
	40% - 60%		50% - 50%		60% - 40%	
	Weighted average	Place	Weighted average	Place	Weighted average	Place
<b>Option 2, Purple route</b>	2.62	1	2.625	1	2.63	1
<b>Option 1, Red route</b>	1.98	2	1.925	2	1.87	2
<b>Option 3, Blue route</b>	1.58	3	1.675	3	1.77	3

The sensitivity analysis strengthens the Option 2, Purple route, as optimum option for 400 kV OHL Bălți – Suceava route. The hierarchy is not affected by hypotheses related to the shares of criteria and indicators.

**The Option 2, Purple route, has been approved by Moldelectrica.**

To conclude, the preferred OHL route meets the IFI requirement – to minimize the land acquisition and displacement.

### 2.2.2 The BtB substation location alternatives

The new BtB Bălți station will be integrated on the new 400 kV OHL Bălți – Suceava route, on a free land of approximately 4 ha, located near the existing 330/110 kV Bălți station.

The available areas located near the 330/110 kV Bălți station, which could be used for the BtB Bălți station are as follows:

- In the North part of the existing 330 kV station, through territorial-administrative authority decision, an area about 23,000 m<sup>2</sup> was obtained, outside the fence enclosure;
- In the South-West part of the existing 330 kV station, near the 330 kV OHL Strășeni bay, there is available space for a possible extension, after decommissioning of station's annexes;
- In the North – East part of the existing 330 kV station, in the vicinity of the 330 kV OHL Dnestrovskaia bay, there is available space, outside the perimeter fence.

Therefore, for location of the BtB Bălți station, three options were analysed, as is presented below.

- **Option 1**

The BtB Bălți station is situated in the North-West part of the 330/110 kV Bălți station, on agricultural land, having direct access to the M14-E583 road (**Figure no. 4**).



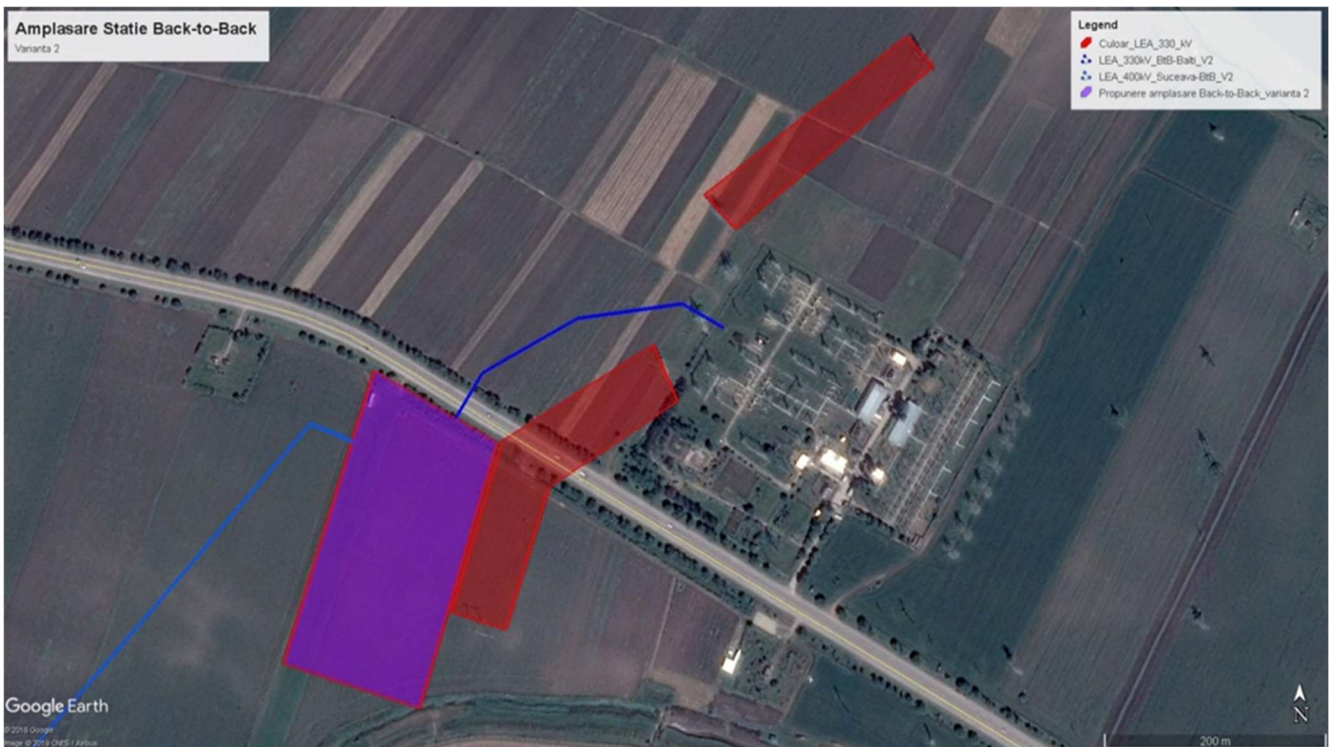
**Figure no. 4. Option 1 for the BtB Bălți station location**

This option has the advantage that is on the 400 kV OHL Bălți - Suceava route and from this location, the connection with the 330 kV Bălți existing station can easily be achieved.

As a disadvantage, the land is not owned by Moldelectrica, therefore is necessary to be purchased

- **Option 2**

The BtB Bălți station is situated in the West part of the 330/110 kV Bălți station, on farmland, with access to the M14-E583 road (**Figure no. 5**).



**Figure no. 5. Option 2 for the BtB Bălți station location**

This option has the advantage that is on the 400 kV OHL Bălți - Suceava route, but comparing with Option 1, the connection with the 330 kV Bălți station is more difficult to achieve.

As a disadvantage, in the proximity, in the Southern part, there is a water course and in the East side there is the 330 kV OHL Bălți - Strașeni, requiring the safety lane. Also, the land is not owned by Moldelectrica, therefore is necessary to be purchased.

- **Option 3**

The BtB Bălți station is situated in the North part of the 330/110 kV Bălți station, in its immediate vicinity (**Figure no. 6**).



**Figure no. 6. Option 3 for the BtB Bălți station location**

The advantage of this option is that part of the land is owned by Moldelectrica, the remainder being needed to be purchased, and the fact that in this option there will be a single enclosure that will comprise both the power station 330/110 kV Bălți and the BtB station.

This option has the following disadvantages:

- For the connection of the 400 kV OHL Bălți - Suceava to the BtB Bălți station and the 330 kV OHL from the BtB Bălți station to the 330/110 kV Bălți station, the 330 kV OHL Bălți - Dnestrovskaya shall be crossed 2 times;
- For organization of the execution works at the BtB Bălți station, direct access from the M14-E583 road is required to transport the equipment and transformers so as not to disturb the operation of the 330/110 kV Bălți station.

Therefore, Option 1 is recommended as technologically optimized. This option assumes the smallest volume of works, does not intersect existing lines routes, and does not alter the proposed route for the 400 kV OHL Bălți - Suceava.

The selected option is in the North-West part of the 330/110 kV Bălți station, on agricultural land, having direct access to the M14-E583 road. The land is extra urban and private propriety formed by several plots with agriculture destination.

### **2.3 Project Land Needs**

The Project needs land both for permanent and temporary use. Alternative BtB sites need about 8 ha of permanent land acquisition.

The main land needs are associated with the OHL route construction and are considered below.

### 2.3.1 Temporary land acquisition

The temporary land use is associated with the OHL construction works.

Land areas which will be temporarily occupied at the construction site are:

- Working platform for suspension towers erection (about 825 m<sup>2</sup>);
- Working platform pertaining to tension towers for erection, phase conductors and ground wires sagging operations (about 1,500 m<sup>2</sup>);

**Table 2.3.1 Land type and surface area affected by the safety corridor**

	OHL including safety corridor [ha]	Forest [ha]	Agricultural lands [ha], including:			
			Agricultural, sub-total	Vineyard	Farmland	Other lands*)
<b>UTA Găgăuzia*</b>	381.3	0.0	381.2	84.0	280.8	16.4
<b>Cahul</b>	64.0	0.0	64.0	33.7	30.3	0.0
<b>Taraclia</b>	172.4	15.5	156.9	28.3	114.5	14.1
<b>Cimslia</b>	101.9	0.0	101.9	30.4	50.0	21.5
<b>Hincesti</b>	302.0	27.5	274.6	26.3	201.6	46.7
<b>Ialoveni</b>	25.6	5.4	20.2	7.4	10.8	2.0
<b>Chisinau</b>	110.4	2.7	107.7	22.9	60.6	24.2
<b>Total</b>	<b>1,157.6</b>	<b>51.1</b>	1106.6	<b>233.0</b>	<b>748.6</b>	<b>125.0</b>
<b>Total, %</b>	<b>100%</b>	4%	96%			

**\*Note3:** Other lands are mostly agricultural lands of different types but can also include other land categories

- OHL working corridor (access zone) 3 m width, for phase conductors and ground wires erection (tension).

More lands will be needed for temporary access roads. Access roads are needed to each tower so in case there is not access road, temporary solution will have to be arranged. After construction the temporary roads and land occupied for construction can be turned back to original land use.

No exact information on the overall land needs for the construction phase is available at the time of this writing, to be developed at the Project design stage.

Table 2.2.1 presents the land-use structure of the land within the safety corridor. About 96% of this required land area refers to agricultural lands. Another 4% are the forest fund land.

### 2.3.2 Permanent land acquisition

The area where tower and possible additional anchoring are found will be permanently used. There are a total of 511 towers. The amount of land required for the permanently affected area will differ between the different types of towers.

Land to be acquired for permanent use by the Project is described in Table 2.3.2. Similarly, to the above, it is mostly agricultural land.

**Table 2.3.2 Land type and surface area permanently affected by tower construction**

District/land category	Total [m <sup>2</sup> ]	Forest [m <sup>2</sup> ]	Agricultural lands [m <sup>2</sup> ], including:			
			Agricultural, sub-total	Vineyard,	Farmland	Other lands*)
UTA Găgăuzia*	11,531	0	11,531	2,993	7,805	733
Cahul	2,839	0	2,839	1,129	1,710	0
Taraclia	6,597	455	6,142	869	4,781	492
Leova	2,763	0	2,763	882	1,361	520
Cimslia	10,365	520	9,845	971	7,665	1209
Hincesti	1,658	0	1,658	325	1,138	195
Ialoveni	3,308	65	3,243	665	1,556	1022
Chisinau	1,768	0	1,768	751	566	451
<b>Total</b>	<b>40,829</b>	<b>1,040</b>	<b>39,789</b>	<b>8,585</b>	<b>26,582</b>	<b>4,622</b>
<b>Total, %</b>	<b>100%</b>	<b>2,5%</b>	<b>97,5%</b>			

\***Note3:** Other lands are mostly agricultural lands of different types but can also include other land categories

Also, permanent land use restrictions will take place within the safety corridor (1,157.6 ha) that will mean some land use limitation, according to the rules established by GD no. 514/2002 (see above).

### 2.4 Impacts associated with the land acquisition

The land acquisition will potentially impact on land use, access to lands, ownership and incomes dependent upon the land.

**During the construction**, temporary land use will provide **the temporary impacts:**

- Impact on property and incomes:

The temporary land acquisition will provide the temporary impact on the landowners. They will not be able to use their land when the construction works are going on. Loss of crops, damage to plans are typical impacts of temporary land acquisition.

- Impact on land-use:

At the construction stage, temporary impacts will occur as the current land use will be not possible. In the case where vineyards or orchards are found, the impacts will be seen over a longer period as some damage or clearing of vine or trees is required.

- Access to land:

The temporarily occupation of land for construction purposes will result in impacts related to changes in land access. These impacts will depend on season when the construction of the transmission line is executed, the period needed for the construction and the land use type.

The **permanent impact of the construction stage** is associated with the permanent land acquisition for the tower basement. The total amount of permanent land acquisition is 40,829 m<sup>2</sup>. Both publicly and privately owned land will be affected by the proposed Project; considering that the ownership is fragmented, including many farms owning less than 1 ha land, a high number of landowners is expected to be affected. Due to a high level of outmigration in the affected area, many landowners might be abroad.

The loss of this ownership must be compensated prior the construction works.

**During the operation** of the OHL the potential impacts will be caused by tower footprints and restrictions within the safety corridor.

- Impact on property/lands:

No additional property loss will happen on the operational stage. But the existence of the tower basements can contribute to the land fragmentation.

The economic displacement due to the OHL will impact people in different ways depending on their situation. In the Project area, many of the land plots are small and therefore for some individuals or enterprises the impact can be high. With proper choice of tower's locations and with appropriate compensation for land loss, the socio-economic impacts are estimated to be moderate to high.

The residual impact on access to land will require the proper compensation

- Land-use restrictions:

Apart from the land to be permanently occupied by the towers, the land between the towers can continue to be used for agricultural or other purposes during the operational stage of the transmission line but there will be restrictions associated with use of certain equipment (high vehicles for example) and activities (for example standing on top of higher objects such as a wagon underneath the power line) in the direct vicinity of the OHL. 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.



- Housing:

According to existing legislation in the Republic of Moldova, there are no houses for residence allowed within the OHL safety corridor of 75 m. No buildings exist within this corridor. Below the OHL, there should be no future constructions, as defined in national legislation. Note: this assessment is based on the proposed OHL route and assume that any deviations from this route does not take it closer to inhabited places, but rather tries to increase distances from any residential areas.

- Health Impact of the electromagnetic field:

The electromagnetic field level will be below the established standards for human receptors, so that the farmers and workers agricultural workers can work under the OHL after it is commissioned. Still, it's important to provide the health and safety information to farmers and agricultural workers, including workers at vineyards and orchards raising their awareness on the magnetic and electric fields generated from the OHL, the exposure and associated risks. Employers need to be informed about their obligations and responsibilities towards their workers. Impacts on workers from magnetic field and/or electric field are expected to be moderate. The risk of unhealthy exposure will persist and necessary follow-up and training is critical.

The lifetime of the OHL is 30 - 40 years, but with appropriate maintenance activities, this can be longer.

### **3. LEGAL AND REGULATORY FRAMEWORK**

#### **3.1 Republic of Moldova Legislation**

The regulatory framework of the Republic of Moldova related to land acquisition and involuntary resettlement are presented in relevant legal norms and several legal acts.

For the purposes of LACF, we mostly focused on the legal matters related to changing land use, land purchasing, and expropriation on the ground of the public utility. These issues are defined in the following legal acts:

- Constitution of the Republic of Moldova (adopted on July 29, 1994);
- Land Code no. 828-XII, 25 January 1991;
- Forest Code no. 887-XIII, 21 June 1996;
- Law on expropriation on the ground of the public utility no. 488-XIV, 8 July 1999,
- Law on normative price for land and sale/purchase procedure no. 1308, 25 July 1997

At the later stages (Project design and Land Acquisition and Compensation Plan preparation) further details shall be considered, including the more specific legal acts such as:

- Water Code No. 1532-XII of June 22, 1993;
- Family Code No. 1316 of October 26, 2000;
- Law On local public administration No. 436-XVI of December 28, 2006;

### **3.1.1 Land use categories and re-categorisation**

The Land code establish the following categories of lands:

- Agricultural land;
- Settlement land;
- Land of Industry/transport/communication and other special purposes;
- Land of nature protection, health, recreation, cultural, sub-urban and green zones;
- Forest fund land;
- Water fund land;
- Reserve land

These categories have different rules of land use and land-use change. For the purposes of LACF, we focused on agricultural land and forest fund land because most of the land needed falls under these categories<sup>3</sup>. The detailed types of lands/land-use management are provided in the Land Code (art.36, 48, 50, 73, 97).

No existing protected areas will cross with the OHL route [ESIA, Table 21], so no legal provisions/limitations on the land of protected areas are applicable.

More details can come on the later stage.

✓ For the agricultural and forest fund land, the Land Code the following provision related to change of land use, temporary land withdrawal from agricultural use and compensation of damages/losses:

- Art. 15 specifies that lands with low land class and lands free of forests are assign for construction of non-agricultural facilities, including OHLs projects;
- Art. 71 defines the possibility to change the use of agricultural land, subject to different approval procedure, as follows:

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<sup>3</sup> According to ESIA, about 73,6% of land needed for the project is agricultural land; another 13,8% is the land of forestry fund; 2,9% waters and the rest 9,7% are titled as „other land” (also mostly agricultural lans, for example, pastures) [ESIA, Table 26 and 27, Figure 40].

- Government decision, in case of agricultural land owned by the State, with the approval of council administrative-territorial unit where the land is located;
  - Decision of the councils of the administrative-territorial units, in case of agricultural land;
  - Decision of the councils of the administrative-territorial units, based on the applications of landowners;
- Art. 74 allows temporary land withdrawal from agricultural use and from forest lands (with no re-categorisation) in case of installation of OHLs; the temporary land withdrawal is approved by local government authorities with the consent of landowners;
  - Art. 97 establishes the obligation to compensate the landowners in case of losses caused by temporary land use, restriction of the rights of land owners (for ex. in case of protection zones) or deterioration of land quality; the compensation shall be assured by enterprises that caused losses; disputes related to recovery of losses and their amount shall be solved in courts or by arbitration;
  - Art. 99 establishes the obligation to compensate losses caused by temporary or permanent land withdrawal from agricultural use and forest lands; the compensation of losses from the state budget for restoring and increase of land fertility and is performed in parallel with repairing the damages;
- ✓ **Forest Code** establishes the following provisions relevant for the proposed investment:
- Art. 78 forbids the reduction of forest area with exception of construction of special facilities; in case of the construction of OHLs investments it is allowed to withdraw forests from the forests fund, subject to special Government decree;
  - Art 79 establishes the rules for compensation in case of forests withdrawn from the forests fund;

### **3.1.2 Expropriation on the Ground of the Public Utility**

- ✓ **Law no. 488-XIV, 8 July 1999**, on expropriation on the ground of public utility defines the procedure applicable in case of expropriation of land for public utilities projects, namely:

- Art 5 establishes the types of public utilities projects (the OHLs projects are included at art. 5 para 1, lit. “e”) that have to be declared as national or local interest;
  - Declaration of public utility provides (Провозглашение общественной полезности осуществляется) after preliminary study if all legal conditions for expropriation are met (art.7).
  - In case of land expropriation for public utilities projects, the landowner is entitled to compensation (art. 9, para. 2);
  - In case that the public administration authority and landowner do not reach an agreement related to the market price of the land, the price should be established by the court, based on an expertise conducted by independent experts (art. 15);
- ✓ **Law no. 1308, 25 July 1997**, on normative price for land and sale/purchase procedure establishes the following provisions relevant for the proposed investment:
- Art. 11 stipulates that lands withdrawal from agricultural use and from forest lands are allowed for public interest;
  - Art 12 stipulates that losses caused by lands withdrawal from agricultural use and from forest lands shall be compensated;
  - Art 15 defines purposes and cases of land expropriation; the land expropriation for public utilities projects is allowed (art. 15 para.3);
  - Art. 17 establishes the rules for compensation in case of land expropriation; the land may be expropriated at the market prices that are not allowed to be less than the normative price specified in the Annex, at item II (1,248.02 MD for one point-hectare); in case that the public administration authority and landowner do not reach an agreement related to the market price of the land, the price should be establish by the court, based on an expertise conducted by independent experts;
- ✓ **GD no. 1170, 25 October 2016**, on approval of provisions for procedure on the assignment, land use change and land exchange establishes the procedure for preparation, submissions and processing the application documents and defines the involved authorities and timeframe of the process; the following provisions are relevant for the proposed investment:
- For state owned institutions and enterprises, public land (both state and administrative-territorial unit ownership) shall be available in order to use it in their business activities (Annex 1, chapter 2, paragraph 6);

- For construction special facilities, including OHLs projects, lands with low land class and lands free of forests shall be assigned (Annex 1, chapter 2, paragraph 7);
- The change of land use shall respect the procedure established by GD no. 1451, 24 December 2007 (Annex 1, chapter 2, paragraph 32-41); the Government approves a decree related to the change of land use from agricultural and forests lands within one month after transferring the funds to the state budget, equivalent to the losses caused by the lands withdrawal from agricultural use;
- ✓ **GD no. 958/2003** on temporary methodology of evaluation of estate/land no matter the type and ownership;
- ✓ **GD no. 514/2002** for approval the Regulation regarding the protection of electrical network defines the following main provisions relevant for the proposed investment:
  - To ensure integrity, normal operation conditions for the OHLs and prevention of accidents several the following main principles shall be respected, namely:
    - Protection zones shall be established;
    - Minimum acceptable distances shall be established between OHLs and buildings, constructions, land, and water areas;
    - Delimitation of corridor clear of trees in massive woodlands and plantations shall be defined;
  - The OHL protection corridor (the land and airspace limited by vertical planes, on both sides of the line), in case of 400 kV OHL shall be 30 m on both side of the line;
  - For the construction and operation, the OHLs, the lands will be assigned according to the legislation;
  - The lands located on the protection corridor, not taken from landowners, will be used for agricultural works and other works in strict compliance with the regulation;
  - The planned works for repairing, technical maintenance and reconstruction of OHLs crossing agricultural land will be performed with the consent of the landowners and usually in the period when the lands are not occupied by crops or when it is possible to ensure the integrity of agricultural cultures and to avoid interruption of agricultural activities.

### 3. 2 IFI's Requirements Pertinent to Land Acquisition and Involuntary Resettlement

International lenders or International Financial Institutions (IFIs) consider land acquisition and involuntary resettlement as one of the most significant negative impacts that may result in long-term hardships for the affected persons and communities as well as environmental damage and adverse socio-economic impacts in host communities. The IFIs have developed their own standards/requirements that their clients should follow if resettlement (either physical or economic) is triggered by the clients' project(s). These standards and requirements are overviewed below.

#### 3.2.1 EBRD

The EBRD uses the Environmental and Social Policy (ESP) and Performance Requirements (PRs) adopted in 2019<sup>4</sup>. The PRs contain requirements to the EBRD clients.

**PR5 Land Acquisition, Restriction on Land Use and Involuntary Resettlement**, outlines the main approach and requirements to physical resettlement, economic displacement, compensations, and livelihood restoration. The requirements of PR5 are obligatory to the EBRD clients.

**EBRD Resettlement Guidance and Good Practice<sup>5</sup> (2016)** explains the key concepts of land acquisition and resettlement, addresses some of the most frequent issues associated with these and provides advice on interpreting and implementing PR5. It is not the compliance document; rather it is a useful resource for better resettlement planning and implementation.

#### 3.2.2 EIB

The overarching EIB E&S document is the EIB Statement of Environmental and Social Standards<sup>6</sup> (2009), whilst concrete requirements, concepts and procedures are presented in the EIB Environmental and Social Handbook<sup>7</sup>. Part I of the Handbook includes ten environmental and social standards.

**Standard 6 Involuntary Resettlement** contains key obligatory requirements to EIB-financed projects that have a land acquisition and/or resettlement component.

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<sup>4</sup> <http://www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html>

<sup>5</sup> <http://www.ebrd.com/news/2017/ebd-launches-new-resettlement-guidance-and-good-practice-publication.html>

<sup>6</sup> <http://www.eib.org/publications/environmental-and-social-standards-2018>

<sup>7</sup> [http://www.eib.org/attachments/strategies/environmental\\_and\\_social\\_practices\\_handbook\\_en.pdf](http://www.eib.org/attachments/strategies/environmental_and_social_practices_handbook_en.pdf)

### **3.2.3 Key IFI requirements pertaining to land acquisition and resettlement**

All IFIs recognise the involuntary resettlement as a critical issue and recommend avoid/minimize it where possible. However, where the land acquisition/involuntary resettlement takes place, it must be properly managed.

The IFI requirements on land acquisition and involuntary resettlement are based on similar principles and approaches and include the same key elements. This document does not intend to stress differences between the EBRD and EIB requirements; rather it considers them in integrity given that all applicable requirements of the IFIs involved into the Project must be met.

#### **3.2.3.1 Involuntary resettlement**

Resettlement is considered involuntary when affected individuals or communities do not have the right to refuse land acquisition, or restrictions on land use, that result in displacement. This occurs in cases of: (i) lawful expropriation or restrictions on land use based on eminent domain; and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail.

The requirements do not apply to resettlement resulting from voluntary land transactions and where such a transaction affects only those with legal rights.

Project-induced involuntary resettlement should be avoided, where possible, and minimised by considering alternative project designs.

[EBRD PR 5, paras 4, 12, 13]; [EIB Standard 6, para 1, 3, 13, 14]

Involuntary resettlement refers both to physical displacement (relocation or loss of shelter) and economic displacement (loss of assets or resources), and/or loss of access to assets or resources that leads to loss of income sources or means of livelihood).

[EBRD PR5, para 55]; [EIB Standard 6, para 12]

Clients are encouraged to acquire land rights through negotiated settlements even if they have the legal means to gain access to the land without the consent of the seller. Negotiated settlements help avoid expropriation and eliminate the need to use governmental authority to remove people forcibly.

[EBRD PR5, para 14]

**Note 2:** This document focuses on the analysis of economic displacement requirements as physical displacement is not triggered by the Project.

### 3.2.3.2 Consultations

#### *Continuous consultations*

Consultations should start early and continue throughout the entire resettlement process, including the implementation, monitoring and evaluation of compensation payment and resettlement. All affected communities should be involved (including host communities).

[EBRD PR5, para 37, 40]; [EIB Standard 6, para 50,51]

#### *Focus on vulnerable groups*

Both men's and women's perspectives should be considered.

Vulnerable groups should be identified through the ESIA process; the client has to ensure that these groups are not disadvantaged in the resettlement process, are fully informed and aware of their rights, and are able to benefit equally from the resettlement opportunities and benefits.

The affected persons shall be given the opportunity to participate in the negotiation over the compensation packages, resettlement assistance, suitability of proposed resettlement sites and proposed timing.

Decision-making processes related to resettlement and livelihood restoration will include options and alternatives from which affected persons may choose.

[EBRD PR5, para 15]; [EIB Standard 6, para 37, 51].

**Note 3:** No Indigenous Peoples (IPs) have been identified in the Project area; so, the IP requirements are not considered herein.

### 3.2.3.3 Socio-economic Assessment and Census. Cut-off Date.

The client will carry out a socio-economic baseline assessment on people affected by the project, including impacts related to land acquisition and restrictions on land use<sup>8</sup>.

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<sup>8</sup> The recommendations on socio-economic survey for the resettlement process are presented in the EBRD Resettlement Guidance and Good Practice (Chapter 3).



[EBRD PR5, para 22]; [EIB Standard 6, para 30]

The client will carry out a detailed census to: (i) identify persons who will be displaced by the project; (ii) determine who will be eligible for compensation and assistance; and (iii) take inventory of affected land and property. The census should take into account the needs of seasonal resource users who may not be present in the project area during the time of the census.

[EBRD PR5, para 21]; [EIB Standard 6, para 30, 32]

The cut-off date should be established. Often the most practicable cut-off date is during the baseline assessment or census. Setting the cut-off date will provide clarity as to eligibility for compensation and assistance. Persons moving into the project location after the cut-off date are not entitled to compensation or other assistance.

[EBRD PR5, para 23, 24]; [EIB Standard 6, para 8, 31].

### **3.2.3.4 Compensation for the Displaced Persons**

#### *Compensation*

The client will offer all displaced persons and communities' compensation for loss of assets at full replacement cost and other assistance. This is intended to restore, and potentially improve, their standards of living and/or livelihoods to pre-displacement levels.

The measures can be based on land, resources, wages and/or business activities. Standards for compensation will be transparent and consistent within the project. Compensation will be provided before displacement or imposition of access restrictions.

Displaced persons/communities should benefit from the project.

[EBRD PR5, para 27]; [ESS 5, paras12-16]

#### *Compensation to land-based communities*

Where livelihoods of displaced persons are land-based, or where land is collectively owned, the client will offer, where feasible, land-based compensation, considering seasonal and agricultural timing requirements.

[EBRD PR5, para 31]

*Who are compensated?*

Displaced persons are classified as persons:

- (i) who have formal legal rights to the land (including customary and traditional rights recognised under national laws);
- (ii) who do not have formal legal rights to land at the time of the census, but who have a claim to land that is recognised or recognisable under national laws;  
or
- (iii) who have no recognisable legal right or claim to the land they occupy.

All displaced persons should get compensation, if they were in the area before the cut-off date.

[EBRD PR5, para 26]; [EIB Standard 6, para 33, 34]

*In case of economic displacement*, if temporary or permanent loss of income or livelihood take place, regardless of whether the affected people are physically displaced, the client will compensate to affected persons/structures all losses.

- to economically displaced persons with legal rights or claims to land which are recognised or recognisable under the national laws (classified as i or ii, see above) provide replacement property (for example, agricultural or commercial sites) of equal or greater value, or cash compensation at full replacement cost where appropriate;
- to economically displaced persons without legally recognisable claims to land (classified as iii, see above) compensate for lost assets other than land, at full replacement cost.

[EBRD PR5, para 61]; [EIB Standard 6, para 34]

### *Replacement cost*

“Replacement cost” is defined as a method of valuation yielding compensation sufficient to replace assets, plus necessary transaction costs associated with asset replacement. Where functioning markets exist, replacement cost is the market value as established through independent and competent real estate valuation, plus transaction costs.

Where functioning markets do not exist, replacement cost may be determined through alternative means, such as calculation of output value for land or productive assets, or the undepreciated value of replacement material and labour for construction of structures or other fixed assets, plus transaction costs.

The valuation method for determining replacement cost should be documented and included in relevant resettlement planning documents.

Transaction costs include administrative charges, registration or title fees, reasonable moving expenses, and any similar costs imposed on affected persons. To ensure compensation at replacement cost, planned compensation rates may require updating in project areas where inflation is high or the period between calculation of compensation rates and delivery of compensation is extensive.

[EBRD PR 5, para 25, 28]; [EIB Standard 6, para 17]

### **3.2.3.5 Resettlement & Livelihood Restoration Planning**

#### *Resettlement/Livelihood Restoration Framework*

A Resettlement and/or Livelihood Restoration Framework will be developed where the exact nature or magnitude of the land acquisition or restrictions on land use related to a project with potential to cause physical and/or economic displacement is unknown due to the project development stage. The framework will outline the general principles, procedures and entitlement framework consistent with the IFIs requirements.

[EBRD PR 5, para 22]; [EIB Standard 6, para 68]

#### *Resettlement/Livelihood Restoration Plan*

Once the individual project components are defined and the required information becomes available, the framework will serve as a basis for the development of a detailed Resettlement Action Plan (RAP) or Livelihood Restoration Plan (LRP).

In case of economic displacement only, the client will develop and implement a LRP. The LRP will establish the entitlements of affected persons and communities and will ensure that these are provided in a transparent, consistent, and equitable manner.

[EBRD PR 5, para 42, 61]; [EIB Standard 6, para 69]

### **3.2.4.6 Grievance mechanism**

The client will establish an effective grievance mechanism as early as possible in the process in order to receive and address in a timely fashion specific concerns about compensation and relocation that are raised by displaced persons and/or members of host communities. It will include a recourse mechanism designed to resolve disputes in an impartial manner.

[EBRD PR 5, para 40]; [EIB Standard 6, para 53]

### **3.2.3.7 Monitoring**

Monitoring of the resettlement and livelihood restoration process will be carried out in accordance with IFIs requirements and should involve the participation of key stakeholders such as affected communities.

[EBRD PR 5, para 49, 50]; [EIB Standard 6, para 70, 71]

### 3.3 Moldova's Legislation versus IFI Requirements: Main Similarities, Differences and Gaps

A comparative analysis national legal requirements against IFI requirements aiming main gaps identification is presented in this section.

**Table 3.3 Gap-analysis: resettlement requirements of Moldova legislation versus IFI requirements**

#	IFI Requirement/concept	Relevant requirement of Moldova legislation	Gap	Proposed Project action
1	Involuntary resettlement: physical displacement and economic displacement	No definitions of involuntary resettlement, physical & economic displacement exist on Moldova legislation.  Expropriation procedure on the ground of the public utility is suggested.	Lack of concept of physical/economic displacement: IFI concept provide the broader options with no contradiction to national law.	Develop LACF/RAP basing on IFI concept
2	Continual consultations/engagement	Public consultations are required within local EIA framework (starting and finishing within the EIA procedure);	No continual consultations/engagement is considering	Foresee the continual participation with the affected groups within LACF/RAP preparation/implementation/ monitoring process
		Negotiations on compensation of losses are possible; the affected people can make proposals.	No consultations on the displacement procedure/eligibility criteria are anticipated	

#	IFI Requirement/concept	Relevant requirement of Moldova legislation	Gap	Proposed Project action
3	Focus on vulnerable groups	No provisions on vulnerable groups exist within the national resettlement framework	Lack of provisions on vulnerable groups	Preparing LACF/RAP, identify vulnerable groups and provide additional efforts for their engagement
4	Socio-economic survey: the assessment of living standards/ lifestyle in the affected communities is required	The preliminary survey is required for justification of public utilities  The generic socio-economic survey is providing within local EIA	Lack of the socio-economic baseline assessment in the affected communities	On the next planning stage (LRP preparation) to provide socio-economic survey, as prescribed/recommended by IFIs standards and guidelines.
5	Census of all displaced persons and inventory of all assets is required	The inventory of all assets is required.  The list of affected people/households is preparing for the compensation purposes	Part compliance. The inventory of assets can be discussed as an analogue	The national procedure will be followed by the authorities
6	Cut-off date	The declaration of public utility can be discussed as partial analogue of cut-off date. The expropriation procedure can start in 10 days after announcement.	No early limitations on land transactions/house-buying is considering	The national procedure will be followed by the authorities

#	IFI Requirement/concept	Relevant requirement of Moldova legislation	Gap	Proposed Project action
7	Compensations and compensation costs	Fair compensation provides to all owners for every asset  The assets' compensation calculated by the licensed experts on the market-based valuation.	Full replacement costs should be compensated (including the market cost of the land/facilities of the same use value and all transactions related to the displacement.	The public authorities will work on the basis of national procedure. In addition, within the LACP preparation, the other measures could be undertaken by the Client where relevant (in-kind compensations, technical assistance, etc)
8	Who is compensated?	Land/real assets owner are compensated	Other categories of land-users should be compensated (look para 3.2.2.4)	Additional studies should be undertaken within LACP preparation, the proper measures to be identified
9	Land-based households	No special provisions on land-based households exist	For land-based households the land compensation is preferable	Investigate the issue and suggest the proper measures within the LACP preparation
10	Resettlement/Livelihood Restoration Planning	No special planning provisions exist	Resettlement and livelihood restoration plan is required at the next planning stage	To prepare LACP, on the basis of census and socio-economoc survey
11	Grievance mechanism	Administrative and court-based mechanisms are established.	No requirements to grievance mechanism exist	To establish the grievance mechanism within land acquisition process
12	Monitoring	No monitoring process is required	Lack of resettlement monitoring	Establish the monitoring process

#	IFI Requirement/concept	Relevant requirement of Moldova legislation	Gap	Proposed Project action
		when expropriation is finished	(including consultations)	within LACP development and carry out monitoring during LACP Implementation.



## 4. KEY PRINCIPLES, APPROACH AND PROCESS

### 4.1. Key principles

The key principles of land acquisition, economic displacements and compensations that will be applied are summarized below:

- Land acquisition and the related economic displacement will be minimized. To this end, a LACP will be developed and implemented.
- Fair and early compensation will be provided based on clear asset valuation:
  - Valuation of land plots and assets will be accomplished. The permanently needed land for the tower foundation may be purchased at market cost as per the provisions of GD no. 958/2003.
  - The Company will ensure that the remaining land (due to the permanent acquisition and/or restrictions related to the safety corridors) is not economically unviable. If this is unavoidable, this will be considered during the valuation process and/or specific measures will be incorporated in the LACP.
  - All RAPs persons will receive full compensation payments before the construction works start;
  - Both temporary and permanent land acquisition will be taken into account and compensated;
  - Negotiated agreements on land acquisition with all RAPs will be achieved, with expropriation only being followed as a last resort where negotiation fails.
- Potentially affected people (PAPs) will be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them to pre-project levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
- Consultation with the PAPs will continue throughout the valuation and compensation process, including the delivery of livelihood activities and measures to assist the resettlement, if such case arises. Particular attention will be provided to women, the poor, and the most vulnerable PAPs. Consultation events will be documented.
- A Grievance Mechanism will be implemented to register and timely and efficiently address the questions and concerns of the PAPs and communities along the OHL route.

## 4.2 Overview of the Process

The land acquisition, compensation and livelihood restoration will be implemented in accordance with the legislation of the Republic of Moldova and EBRD PR5, EIB ESS6 and requirements. Following the IFI requirements, the LACF has been prepared at the Feasibility stage based on the existing information.

At the Project Design stage, a detailed LACP will be developed. The LACP should be approved by IFIs before the implementation.

This Plan will include the steps that are described below.

### 4.2.1. Declaration of Public Utility

Given the importance of the Project for the Republic of Moldova, it is expected that the Parliament will declare the Project's public utility.

The procedure of Declaration of the public utility contains the following steps:

- Preliminary research has to be done for the Project of “national interest” by a Commission;
- The Commission is approved by Governmental Decision and consists of representatives of the following authorities:
  - Ministry of Economy;
  - Ministry of Regional Development and Construction;
  - Ministry of Agriculture and Food Industry;
  - Ministry of Finance;
  - Ecological Inspectorate of State, Ministry of Environment;
  - Institute of Designing for Territorial Organization – State Enterprise;
  - Each district where the transmission line passes (president);
  - Each commune where the transmission line passes (mayor);
  - Each village where the transmission line passes (mayor).
- The Commission establishes the arguments for the “national interest”, the socio-economic and ecological premises or other reasons for the necessity of the Project;
- The Declaration of public utility of the Project is made known by public announcement at the Local Councils and by publishing in the Official Gazette;
- The owners of the land expropriated must be announce in 10 days from the data of the declaration of public utility.
- The announcement will content the compensation measures, too.
- If the owner doesn't agree the compensation in 45 days can submit complaint. This complaint must be resolved in 30 days by Commission.

LACP must include the national expropriation procedure of the “national interest” Project, as well as to consider the following:

- How the information is disseminated and how the public consultation will be conducted.
- The Grievance mechanism.
- The monitoring and evaluation of the LACP implementation.

#### **4.2.2. Establishing the cut-off date**

The date of establishing (announcement) of the public utility of the Project could be considered as an analogue of the cut-off date. Newcomers cannot appear in the area after this date, any new persons that may appear after this date do not have rights for compensations.

#### **4.2.3. Socio-economic Survey**

The socio-economic survey will be undertaken within the LACP development in parallel with the census/assets' inventory preparation. The approach will ensure the consistency the socio-economic survey, census and assets' inventory and will allow for the efficient land acquisition mitigation.

In this case, the socio-economic survey should cover the following issues:

- Identification of the RAPs.
- Focused survey of the local livelihood/living standards; the special attention should be paid to the dependency of the RAPs/affected households on land. For the land-based household/persons the natural compensation is preferable.
- The vulnerable groups should be identified. The specific measures ensuring their engagement into and benefits from the Project to be developed.
- The broader socio-economic context (Rayon and settlement level) should be studied and presented in detail. The development opportunities for the RAPs should be outlined.

#### **4.3. Census of the RAPs and Assets' Inventory**

MOLDELECTRICA should conduct a detailed census of the RAPs, including

- (i) people who have formally acquired legal rights for the assets and
- (ii) people who declare the rights (not fully acquired but recognised by Moldova legislation). These people should get the legal assistance in official recognition of their rights where possible; the compensation should be provided.
- (iii) People who do not have these rights but use the assets for many years should be included. They will not get compensations for the land but should be compensated for their property.

The Census should include the names of all RAPs, data on age, sex, education, income, occupation and skills of the RAPs, rights to the real assets, household information; indication of the land-based households.

The real assets (land plots, proprieties, and other assets) should be identified; the assets' inventory should be developed.

The census and the assets' inventory will be based on the cadastral information and the results of the socio-economic survey. The 100% coverage of the RAPs is required. If the discrepancies between cadastral data and real information (found within socio-economic survey or census) would be found, for example, the owners have been changed (with no proper registration) or leave or dead, the Company and the Authorities will share the information and mutually find the proper decision, avoiding inconsistency in information, duplications and controversies in the further steps and decisions.

Both, the census, and the inventory should be done by local public administration responsible for the land acquisition process, with the support of the experiences company (providing guidelines/training, etc.). It is important to reach the consistency of the census of the displaced persons and assets' inventory.

Investigations may be needed to identify if there are informal owners of the land plots to be acquired. All the affected people formal or informal included in the census are eligible for compensation. Informal affected people first must clarify their situation in accordance with the national legislation.

In the case of absentee owners (e.g., people with legal rights to the land but who are living elsewhere), they will still be eligible for compensation and the Company should make, and document, good faith efforts to find them and inform them about the process. These efforts may include efforts to reach them through their neighbours, publication of an ad in newspapers informing about the process, etc. If they cannot be found, and in accordance with local requirements, the compensation amount must be allocated in the special account and be readily available should the absentee owner reappear.

Based on the socio-economic survey, census, and assets' inventory the next step should be planned and implemented.

#### **4.4 Compensations**

It is the key principle that all the RAPs should be compensated.

The licenced experts according to the national legislation (see above) will calculate the compensation costs. The authorities responsible for the land acquisition and compensations will pay these compensations (including the legalization fees and any taxes related to land acquisition).

The Company shall ensure within the LACP process that all losses are compensated, and the full replacement cost will be provided (direct compensations and in-kind indirect assistance). Where necessary, the Company will contribute in providing displacement assistance.

A preliminary entitlement matrix is present in Annex 2.

#### **4.5 Methods of valuing assets**

In the Republic of Moldova, there is a guideline on valuating the assets, approved by GD no. 958/2003. The assessment process includes several stages as follows:

- Defining the subject to assess, the patrimonial rights, the purpose of assessment, the type of estimate value, the domain to apply the results and the limits.
- Collecting and analysing the evaluation data as economic and social of the area where the assets are, specific information of usage, costs, undervaluing and possible revenue, selling price on the market of the same assets, etc.
- Applying the assessment methods recommended for each type of assets (housing, lands, commercial building, industrial constructions depending on the market development and the ones unique and specialised).
- Values reconciliations and estimation the final value.
- Elaboration of the assessment report.

The lands needed to implement the Project are generally agricultural (crops, vineyard, or orchards, grazing cattle, etc.). Two methods are recommended in this case: one method is a comparative analysis of the sales and the second one is the method of revenues.

The comparative analysis of the sales method is based on the estimation of market value of the asset compared with similar assets recently sold and on adjustments of the selling price for the differences between these assets and the one assessed. This method is applying as a standard procedure consisting of the following actions:

- Collecting and analysing the market information to select the comparable assets.
- Identification of the elements that can be compared.
- Determination of the adjustment level.
- Comparison of the asset evaluate with the similar ones to adjust the selling prices.
- Analyse the adjusted price of the comparable assets to determine the market value of the one assessed.

The comparison elements used in this method are the property rights and other real rights, financing, transaction and market conditions, location, physical and economic characteristics, usage, and other components there are not directly related with the asset.

The revenue method is valuing the asset based on the net income future generated and is applied in two phases:

- Prognoses of the future incomes.
- Determination of the actual value of the future incomes.

The future incomes are provided by the following sources:

- Payment of the rent collected after the lease of the assets.
- Income from the commercial exploitation of the assets.

The land occupied permanent by the tower foundations must be assessed with one of the methods recommended. These values should be presented to the Commission for expropriation to establish the compensation measures.

If due to unpredictable interventions during operation and/or maintenance, some land/assets are affected or access to assets is restricted, compensation should be offered to the owners. These interventions can be e.g., damages to the crops, vineyards, orchards and other assets that produce income.

## **5. DISCLOSURE OF INFORMATION, PARTICIPATION AND CONSULTATION**

A stakeholder's engagement is the key ESIA element carried out by MOLDELECTRICA. The Stakeholder engagement Plan (SEP) has been developed providing the legal and policy framework, overview of the previous consultations, stakeholder identification and analysis, consultation program, grievance mechanism and monitoring. The SEP will be implemented, analysed and updated throughout the Project lifecycle on a regular basis.

At the stage, the ESIA information disclosure package includes ESIA Report including the Environmental and Social Management and Monitoring Plan (ESMMP), this LACF, SEP and Non-Technical Summary (NTS) that summarise all findings, information, and process.

This package will be available on MOLDELECTRICA and EBRD websites, and hard copies will be made publicly available at MOLDELECTRICA offices (headquarter, regional bureaus) and administrative buildings / mayoralities of the neighbouring communities inside 400 kV OHL route survey corridor.

Currently, the land acquisition issues are discussed on the level of principles and approaches, as suggested above, within the general stakeholder engagement process. At the next stage (during the LACP preparation and implementation), specific communication tools and opportunities will be proposed; a separate section/addendum devoted to

consultations on economic displacement will be added to the SEP. MOLDELECTRICA LAC Officer will be hired for better communications with the affected community.

## 6. GRIEVANCE REDRESS MECHANISM

A grievance mechanism already set up under the SEP will be used to collect feedback regarding the LACP preparation and implementation. MOLDELECTRICA needs to be responsive to any concerns and complaints on land acquisition issues, particularly from affected stakeholders and communities, and provide information on compensation and livelihood restoration measures.

Any comments or concerns can be brought to the attention of the Company verbally (by phone) or in writing (by post or e-mail) or by filling in a specific grievance form (**Annex 1– Land acquisition grievance form**). The grievance form will be made available in the mayor's office, community centres and other public places that are easily accessible for all relevant stakeholders.

The form after being filled out will be forwarded to the indicated contact person, who will register it and will ensure that all actions are made to close out the complaint.

Efforts will be made by MOLDELECTRICA to prevent grievances by ensuring full participation and consultation of the potentially affected parties / communities.

## 7. LACF IMPLEMENTATION, BUDGET, MONITORING AND REPORTING

MOLDELECTRICA will be responsible for the implementation of all aspects of this LACF and the detailed LACP in the moment when it will be available.

When the final tower locations will be decided and the corridor is established, before the construction activities starts, the LACP will be developed and implemented in three stages:

1. Public meetings, census and socio-economic survey are taken place.
2. Acquisition of property rights on the lands and payment of compensation.
3. Monitoring of and reporting on LACP implementation.

The LACP budget will consist of the costs for land acquisition, compensation, monitoring, evaluation, and other administrative expenses. This budget will be included in the overall costs of the Project.

## ANNEX 1 – Public Grievance Form

**Reference No:** *(to be completed by Moldelectrica)*

**Received by:** \_\_\_\_\_

**Solved by:** \_\_\_\_\_

**Date of initial response:** \_\_\_\_\_

**Full Name:**

*(to be completed by the person lodging the complaint)*

**Note:**

*you can remain anonymous if you prefer or request not to disclose your identity to the third parties without your consent*

**My first name:** \_\_\_\_\_

**My last name:** \_\_\_\_\_

**Company / position in the company:** \_\_\_\_\_

- I wish to raise my grievance anonymously  
 I request not to disclose my identity without my consent

**Contact Information:**

*(to be completed by the person lodging the complaint)*

*Please mark how you wish to be contacted (mail, telephone, e-mail).*

**By Post:** Please provide mailing address:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**By Telephone:** \_\_\_\_\_

**By E-mail:** \_\_\_\_\_

**Preferred Language for Communication:**

*(to be completed by the person lodging the complaint)*

- Romanian  
 Russian

**Would you like to receive information on the Project development?**

*(to be completed by the person lodging the complaint)*

- Yes  
 No

**Description of Grievance:**

*(to be completed by the person lodging the complaint)*

What happened? Where and How did it happen? What are the results / consequence / impact of this issue?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Date of Grievance:** *(to be completed by the person lodging the complaint)*

- One time grievance (date \_\_\_\_\_ DD.MM.YYYY)  
 Happened more than once (how many times? \_\_\_\_\_)  
 On-going (currently experiencing problem) \_\_\_\_\_

What would you like to see happening in order to solve this issue?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please return this form filled in to: MOLDELECTRICA [Nelly Melnicenco, melnicenco@moldelectrica.md]



## ANNEX 2 – Compensation Entitlement Matrix

Type of Project Affected Right or Loss	Category of PAPs	Entitlement
Temporarily loss of crops/trees during construction along the OHL (crops, orchards, vineyards, etc.)	Registered owners Legalizable Owner Non-legalizable users	Compensation of losses or damages of crops
	Renter/Leaseholder	
	Person coming in the area after cut-off date	Not entitled to compensation
Temporary use of land during construction	Registered owners  Legalizable Owner	Civil Works Contractor will lease land required temporarily during construction on voluntary basis where landowner/user will have the right to say ,no'. Lease rates to be paid should not be less than lease at current market rates, plus compensation for any loss of crops or trees at gross value of 2 year's harvest of crops on the affected lands. It is also required that lands (or other assets) be fully cleared and restored following use.
Permanently loss of land and crops/trees due to the installation of tower foundations	Registered owners Legalizable Owner	Compensation of land and losses or damages of crops.
	Non-legalizable users	Non-legalizable PAPs losing agricultural land plot, which is the only land plot used and provides main source of income for AH, will be compensated for land with one time allowance in cash equal to 1 year of minimum subsistence income
	Renter/Leaseholder	Eligible for crops compensation only
	Person coming in the area after cut-off date	Not entitled to compensation
Loss of state-owned land	State body owning state land	No compensation as the state land ownership rights are transferred to the Project developer, which is a state enterprise
Loss of state-owned trees, bushes, or other vegetation within the safety corridor of the OHL	Authority responsible from trees, bushes or other vegetation	Planting in other location establish by authorities
Restrictions on land use during operation (e.g.	Registered owners	Easement agreement will include shall be concluded

Type of Project Affected Right or Loss	Category of PAPs	Entitlement
easement for the OHL safety corridor)  <i>Note: PAPs are not losing their land falling within the safety corridor, but land use restrictions imposed (e.g., prohibition to construct structures)</i>		based on independent valuation
	Legalizable Owner	These PAPs will be legalized and the owner will receive easement fee as determined by an independent valuation
	Renter/Leaseholder	Not eligible for easement fee for land-use restriction.
	Non-legalizable users	Not eligible for easement fee for land-use restriction.
Buildings, structures, or facilities	Registered owners	Compensation amount determined by independent valuation
	Legalizable owners	Compensation amount determined by independent valuation
	Buildings, structures, facilities without legally recognized rights	No compensation is foreseen.
Loss of common property and/or resources	Community/Government	Reconstruction of the lost structure or replacement of agricultural lands in consultation with community and restoration of their functions
Business/Employment	Business owner	(i). (Permanent impact) cash indemnity of 1 year net income;  (ii) (Temporary impact) cash indemnity of net income for months of business stoppage.  Assessment to be based on tax declaration or, in its absence, minimum subsistence income.
	Workers/employees:	Indemnity for lost wages equal to 3 months of minimum subsistence income and job trainings.