Moldova Energy Projects Implementation Unit

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Moldova Competitive Power Market Project (P160829)

Consulting Services

Contract No. TF-02/2018

Environmental and Social Management Plan for Moldelectrica new building

Final version

(Translated from original in Romanian)

Chisinau,
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An Environmental and Social Management Plan (ESMP) outlines the mitigation, monitoring and institutional strengthening measures to be taken during project implementation and project operation phases to avoid or eliminate negative environmental/social impacts. For projects of intermediate environmental risk (Category B) an ESMP may be an effective way of summarizing the activities needed to achieve effective mitigation of negative environmental/social impacts.

Chisinau, December 2018

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Abbreviations

EA Environmental Agency

EIA Environmental Impact Assessment
EPI Environmental Protection Inspectorate

ESMF Environmental and Social Management Framework

ESMP Environmental and Social Management Plan

GRM Grievance Redress Mechanism
GRS Grievance Redress Service
LSI Labor State Inspectorate

MAC Maximal Admissible Concentration
MAFP Mobility and Access Facilitation Plan

ME Municipal Enterprise

MEPIU Moldovan Energy Projects Implementation Unit

MoEl Ministry of Economy and Infrastructure

NIP National Inspectorate of Patrol

OM Operations Manual PHC Public Health Center SE State Enterprise

SEE State Ecological Expertise
TSA Technical Supervising Agency

Introduction

Preparation and implementation of proposed Project activities is grounded on the basis of both the national legislation and WB safeguards (OPs), namely OP/BP 4.01 (Environmental assessment) and OP/BP 4.11 (Physical Cultural Resources) (*Annex* 1), which were triggered in the framework of this project. Compliance to the above will be maintained throughout the project's lifecycle. For achieving this obligation, the project beneficiary developed site-specific ESMP to identify, avoid and/or minimize, mitigate or compensate potential impacts of project components on the natural and social environment in a way consistent with both national legislation and WB policies.

The required mitigation measures and issues to be addressed through ESMP instruments for the project activities are standard and widely used in construction practices. These include proper waste management and disposal of construction debris (including asbestos), proper wastewater treatment; heating and fuel system assembly, dust and noise control, sensitivity of designs to cultural settings, and cultural heritage/chance finds procedures.

In practice, these issues will be addressed through a series of local permits detailed in the environmental framework review, through contractor site supervisor oversight, through the local municipality requirements, and through the project implementation unit responsible for the construction.

The site-specific Environmental and Social Management Plan will be prepared for already selected site where construction works will be implemented, publicly consulted and disclosed locally before procurement commences for the civil works.

ESMP requirements will be included in the bidding and contract documents as integral part of both construction execution and technical supervision phases.

1. Project description and location

The proposed Project component includes investment assistance for the new premises center for SE Moldelectrica, and is estimated at about 7,0 M USD. Construction of the new building will be financed by the World Bank, and will include a new command/dispatch center, modernization of SCADA/EMS and Electricity Evidence Management System (MMS), and which will host about 300 employees. The new 5-level building is planned to be constructed on a vacant plot, which is the state property managed by SE Moldelectrica (*Annex* 2).

The new premises will be built on the eastern part of Chisinau, 5 km far from the city center, at the border with the city industrial zone, on the address: **8, Ciocana Street, Ciocana Sector, Chișinău.** The total land area selected for the construction of the new facility with the cadastral number **01003060007** is **1.5** ha (*Fig. 1-3, Photo 1, Annex 2*).

As of December 2018, the land plot is adjacent to an area with mixed functions (residential, commercial, service delivery, industrial etc.) in Ciocana Sector.

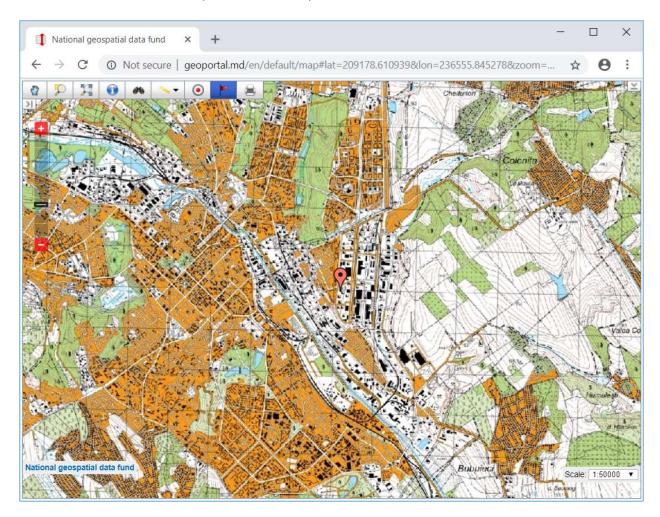


Fig. 1: Site location, scale 1:50000. Source: National Geospatial Data Fund, geoportal.md.

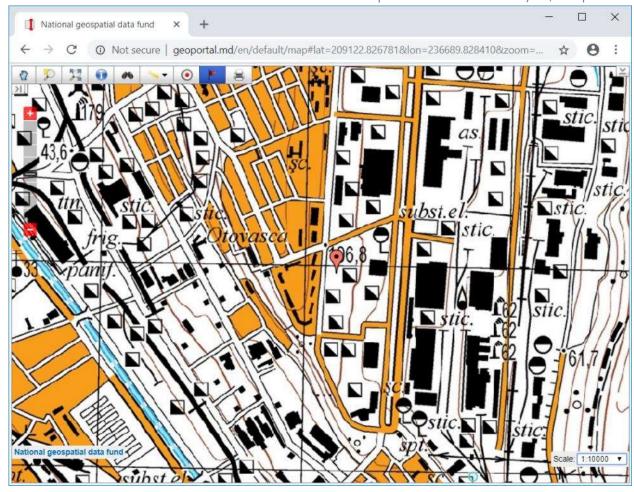


Fig. 2: Site location, scale 1:10000. Source: National Geospatial Data Fund, geoportal.md.

There are no sensible areas and natural objects on the selected project site, nor in its vicinity (natural vegetation or water courses, or protected areas). The shortest distance to the residential sector and the industrial production area in the vicinity is about 50 m (*Fig. 2-3*).



Fig. 3: Site location and land use. Source: GoogleEarth.

It is planned that the new building will be connected to existing centralized municipal utilities – water supply, sewerage, natural gas, electricity supply, telecommunication, which should be confirmed by technical notices and technical conditions (*Tab.* 1), according to local existing procedures:

- ► Technical conditions for the design of water supply and wastewater networks JSC Apa-Canal Chisinau
- ► Technical requirements for the organization of the pluvial (rain waters) accumulation evacuation ME Exdrupo
- ▶ Electrical network connection notice JSC RED Union Fenosa
- Phone/Internet connection notice JSC Moldtelecom
- ► Technical conditions and approval on connection to gas supply network ME Chisinau-Gaz.

2. Project Implementation and Environmental Management

As planned, the new ME building construction works will be carried out with all the appropriate permitting documents issued by the central public authorities and in full compliance with the national coordination procedures, applicable environmental requirements and rules at all the project stages.

Estimated duration of construction works for Moldelectrica new building is **18 months** from the start of the construction.

The main stages and procedures of the Project:

- (I) pre-design stage feasibility, geological, topographic surveys (topomaping 1:2000) and pedological survey (Report on pedological investigations, if any); coordination and approvals (sanitary no-objection for the allocation of the land plot for construction, environmental no-objection for design and construction etc.); design permit (Certificate of urbanism) and oths.¹ (Tab. 1-2).
- (II) design stage drafting the Environment Protection component of the Detail Design in accordance with the current Construction Norms, including identification of landscaping solutions for adjacent land and energy efficiency solutions; development of the Environment Management Plan covering the construction and operation stages; coordination and approvals in accordance with the approved national procedures (sanitary no-objection for design materials, State Ecological Expertise on the design documents etc.).
- (III) construction and landscaping conducting construction works according to the approved design documents, taking appropriate measures for environment protection and rational use of natural resources (ref. Annex 3 and 4);

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¹ The SE Moldelectrica, which is the legal Beneficiary of the building, is responsible for applying and obtaining all the appropriate no-objections and approvals before the starting the design works.

- environmental no-objection for the final acceptance of works and putting the premises into operation.
- (IV) operation ensuring measures for environment protection and rational use of natural resources during the entire operational life of the premises, including the sanitary authorization, evaluation and authorization of air pollutant emissions, adequate management of solid waste, rational water use, energy efficiency etc.

All the coordination, approval and authorization procedures under the national law, World Bank (WB) and recommended internationally in the field of environment protection and rational use of natural resources will be followed during the design activities, construction works and new facility operation (*Tab.* 2).

Tab. 1: List of permit documents required for developing the new ME building design

| Nr. | Document Title | Legal base | Autoritatea, care eliberează actul |
|-----|--|--|---|
| 1. | Title deed regarding the property on the land for the new building | Order #110/2016 | Agency Land Relations and Cadastre |
| 2. | Excerpt from the State Real Estate Registry | X | Chisinau Territorial Cadastral Office |
| 3. | Geometric Plan | Construction Norms NCM A.06.02:2015 Execution of geodesic works in construction | IPOT (The State Planning Institute for Land Management) |
| 4. | Scheme of the technical urban facilities | Construction Norms NMC A.06.02:2015 Execution of geodesic works in construction | IPOT |
| 5. | Topographical survey and plan at scale 1:2000 | Construction Norms NMC A.06.02:2015 Execution of geodesic works in construction | Chisinau Territorial Cadastral Office |
| 6. | Sanitary approval on allocation of land for construction | Law no. 10 of 03.02.2009 on state supervision of public health | Chisinau Municipal Public Health Center |
| 7. | Environmental approval on land for the placement and design of the object | Law no. 1515 of 16.06.1993 on environmental protection; Government Decision no. 1451 of 24.12.07 on Regulations on the assignment, modification of the destination and return of lands | Chisinau Environmental Protection Inspection |
| 8. | Permit to obtain the Certificate of urbanism for design works (Civil Protection) | Law no. 267 of 09.11.1994 on fire protection; Law no. 163 of 09.07.2010 on authorizations of construction works | Chisinau Department of Firefighters and Rescuers |
| 9. | Initial environmental assessment of the planned activity | Law no. 86 of 29.05.2014 on environmental impact assessment | Ministry of Agriculture, Regional Development and Environment |
| 10. | Geological survey | Subsoil Code no. 3 of 02.02.2009; Law no. 163 of 09.07.2010 on authorization of construction works | Authorized company |
| 11. | Approval on connection to electricity grid | Law no. 163 of 09.07.2010 on authorization of construction works | JSC RED Union Fenosa |
| 12. | Approval on connection to telephone line | Law no. 163 of 09.07.2010 on authorization of construction works | JSC Moldtelecom |
| 13. | Approval on connection to gas network | Law no. 163 of 09.07.2010 on authorization of construction works | SE Chisinau-Gaz |

| Nr. | Document Title | Legal base | Autoritatea, care eliberează actul |
|-----|--|--|---|
| 14. | Technical requirements for network design of water supply and wastewater discharge | Law no. 163 of 09.07.2010 on authorization of construction works | JSC Apa-Canal Chisinau |
| 15. | Technical requirements for network design of storm/rain water discharge | Law no. 163 of 09.07.2010 on authorization of construction works | ME Regia "Exdrupo" |
| 16. | Coordination of project documentation with the client | Contract on design services | Moldelectrica |
| 17. | Coordination of the Concept Design with the lead/chief architect of Chisinau | Law no. 163 of 09.07.2010 on authorization of construction works | Lead architect of Chisinau |
| 18. | Design Permit issued by The Ministry of Justice (comes as a substitute for the Certificate of Urbanism) | Law no. 163 of 09.07.2010 on authorization of construction works | Ministry of Justice |
| 19. | Technical theme for the design | Law no. 163 of 09.07.2010 on authorization of construction works | Design company |
| 20. | Topographical Survey 1:500 | Construction Norms NCM A.06.02:2015 Execution of geodesic works in construction | Authorised company |
| 21. | Geometric Plan | Construction Norms NCM A.06.02:2015 Execution of geodesic works in construction | IPOT (The State Planning Institute for Land Management) |
| 22. | Detailed Geological Studies | Subsoil Code nr. 3 of 02.02.2009; Law no. 163 of 09.07.2010 on authorization of construction works | Authorised company |
| 23. | Permit of verification of the Project Documentation (Concept Design) | Law no. 163 of 09.07.2010 on authorization of construction works | State Inspection |
| 24. | Sanitary permit regarding design materials | Law no. 10 of 03.02.2009 regarding the state supervision of public health | Public Health Center |
| 25. | Permit from the Ecological State Expertise regarding the Detail Design | Law no. 851 of 29.05.1996 regarding state ecological expertise; Law no. 86 of 29.05.2014 regarding the environmental impact assessment | Environmental Protection Inspectorate |
| 26. | Permit regarding the coordination of the Detail Design (Civil Protection Service) | Law no. 163 of 09.07.2010 on authorization of construction works; Law no. 267 of 09.11.1994 on fire protection | Civil Protection and Emergency Situations Service, Department of Firefighters and Rescuers Chisinau |

| Nr. | Document Title | Legal base | Autoritatea, care eliberează actul |
|-----|---|--|--|
| | Coordination of the project excerpt with the lead/chief architect of Chisinau | Construction Norms | Design company |
| | Permit of verification of the Project Documentation (Detailed Design) | Law no. 163 of 09.07.2010 on authorization of construction works | State Inspection |
| 29. | Construction Permit | | Chisinau Mayoralty (Ministry of Justice) |

 Tab. 2: Implementation stages, main activities and relevant documents

| Stage | Activities | Documents |
|---|---|---|
| Pre-design (Concept Design) | i) Feasibility, topographic, geological and pedological studies ii) Environmental screening prior to the planned activity (under Directive 2011/92/UE on the assessment of the effects of certain public and private projects on the environment) iii) No-objections and approvals according to the national requirements and procedures | i) Topographic mapping 1:2000; Report on geological and pedological (if any) studies ii) The decision of the Ministry of Agriculture, Regional Development and Environment following the prior evaluation of the planned activity iii) Sanitary no-objection for allocation of land for construction. No-objection for object design etc. |
| Design (Developed Design and Technical Design) | i) Development of the Environment Protection component of the design documents in accordance with the Construction Norms, including identification of landscaping solutions for adjacent areas and energy efficiency solutions ii) Development of the environment management and monitoring plans for the construction and operation stages iii) No-objections and approvals in accordance with the national procedures | i) Environment Protection component ii) Environmental management and monitoring plan for the construction stage; environment management and monitoring plan for the Moldelectrica building operation stage (see concept above) iii) Sanitary no-objection for design materials; state environmental expert opinion on the Technical design etc. |
| Construction and landscaping | i) carrying out works in accordance with the approved Technical design, taking efficient measures for environment protection and rational use of natural resources (ref. Annex 3) ii) environmental monitoring of construction works | i) Updated environmental management and monitoring plan for the construction stage ii) Environmental monitoring report iii) Environment and sanitary no-objections for the final acceptance of works. |

| Stage | Activities | Documents |
|-------|---|---|
| | iii) environmental and sanitary no-objections for the final acceptance of works and for putting the facility into operation | |
| | i) ensuring measures for environment protection and rational use of natural resources throughout the entire operational life of the facility, including efficient management of solid waste, rational use of water, energy efficiency etc. ii) compliance with the sanitary requirements and sanitary authorization for operation in line with the applicable procedures iii) evaluation and authorization of air pollutant emissions in line with the applicable requirements etc. iv) contracting water supply and sanitation utilities v) contracting solid waste disposal services etc. | i) Environmental monitoring report; updated Environment management and monitoring plan for command center operational life; ii) Sanitary authorization for operation iii) Environmental authorization for air emissions etc. iv) Contract for water supply and sewerage services v) Contract for solid waste disposal and transportation to an authorized landfill. |

3. The Natural and Social Framework

3.1 Geographical location

As already mentioned in Section 1, the total area allocated for the project activities is 1.5 ha, while the new building is designed to stretch on approx. 0,2 ha. The construction site is located on the middle part of the slope, which is slightly inclined estwards, with a stable topography, well drained, without any obvious signs of linear erosion and landslides (**Photo 1**; **Fig. 3-4**).



Photo 1: Selected site for new ME building (Nov 2018).

3.2 Natural environment and biodiversity

3.2.1 Geology and hydrogeology

According to preliminary expert findings, the engineering and geological conditions on the project site are *conditionally favourable*. The site itself and the surrounding areas are stable, showing no signs of geodynamic phenomena, which could affect the future construction.

In accordance with Moldova's Seismic Zoning Map $(2010)^2$, the project site is located in the 7^{th} degree hazard zone (MSK). The predominant rock category by seismic properties is II.

3.2.2 Geomorphological conditions

According to the country's physical-geographical regions³, the project site is located on *a Hilly plain of the Steppe zone*. The main topography elements are the watersheds and slopes around them with various inclinations.

Geomorphologically, the project site is located on the local slope on the left side of the watershed of the Bic River (*Fig. 4*). No hazardous geomorphological processes and phenomena (signs of linear erosions, landslides, ground subsidence etc.) within the radius of 100 meters of the investigation site have not been observed.

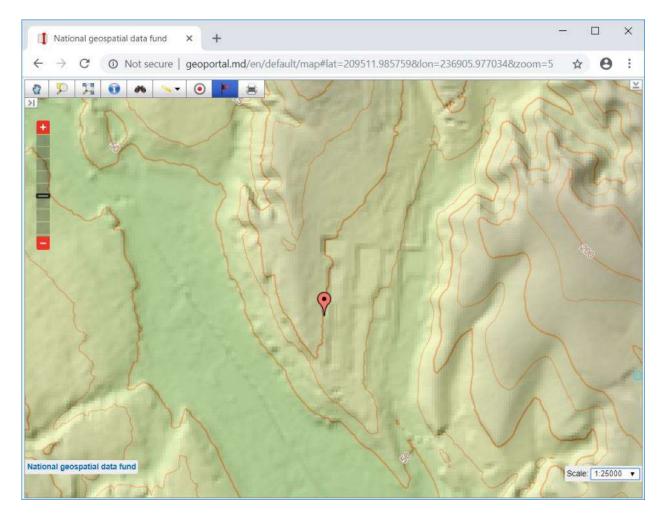


Fig. 4: Project Site Hypsometry. Source: National Geospatial Data Fund, geoportal.md

3.2.3 Soil cover

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² The Minister of Constructions and Regional Development. Order no. 25 of 23.12.2009 on the approval of the Seismic Zoning Map of the Republic of Moldova (scale 1: 400 000). Published on 14.05.2010 in the Official Monitor no. 72-74, art. no. 277.

³ The Republic of Moldova. Atlas. Physical Geography. Iulian Publishing House, Chisinau, 2002, P. 30.

According to preliminary soil expert observation, there are no natural soils on the seleted site. The natural soil cover is fully transformed, nivelated and under construction and paved with asphalt and concrete (*Photo 1, Fig. 3*).

3.2.4 Climate conditions and air quality

Climatically, the project site is located in the *second central district*⁴, characterized by higher temperatures, but lower humidity, with snow surviving longer at higher altitudes. According to the multiannual data, the climate characteristics of the project site are:

Altitude: 90-110 m Sunny days: 300-310 Sunshine hours: 2100-2200 Average annual temperature: 9,0-9,5 °C Sum of temperatures above 10 °C: 3000-3200(3250) Annual total precipitation: 500-550 mm Evaporable: 800-850 mm Hydrothermal coefficient: 0,8-1,1 (0,60-0,65)

Draughts per decade:

Vegetation period: 177-182 days
Frost days: 174-189 days

As a background on air quality the pollution concentration data from the Stationary Observation Post (171, Uzinelor Street) will be used to develop the Environment Protection component of the Detail Design documentation.

2-3

3.2.5 Water resources

The project site is located in the Bic River basin, on the right side of the left small tributary, 1000 meters upper from the riverbed (*Fig. 4*).

The project site is located on a well-drained land plot, **outside the surface water and groundwater protection areas** and the sanitary areas for the protection of drinking water sources.

3.2.6 Flora and fauna

There is no natural vegetation on the selected site. The fauna includes just several species of urban birds. Habitats of rare or valuable animal species are missing.

3.2.7 Protected natural areas

There are no valuable objects and areas, as well as sensible areas on the project site. Moreover, the land allocated for the project has been used for a long time as an industrial and no longer has any native natural elements that could need to be considered for protection.

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⁴ The Republic of Moldova. Atlas. Physical Geography. Iulian Publishing House, Chisinau, 2002, P. 19.

3.3 Social environment and infrastructure

3.3.1 Population from the project area

The population of the Ciocana sector is according to the statistical information from 2017 estimated at 118 thousand persons, a relatively stable number in the last 3 years.

The closes living area are at 50 m far from proposed project area.

3.3.2 Economic profile of the project area

The examined land managed by Moldelectrica is located in the industrial area of the Ciocana Sector (Fig. 1-3).

In the south, north and east are buildings belonging to economic entities that carry out trade, services and part production. Only in the west are 3 buildings (Maria Dragan Street, ##30/1-30/2, 32, 34/1-34/2) residential blocks with 9 floors each (*Fig. 3, Photo 1-2*).



Multistore building – western part, 50 m far from project location



Warehouses, pharmaceutical company, offices – on the north of project site

Photo 2: Surroundings of project location.

The aproximative 800 population are living in this building with most possible impact to up to 200 populations, APLP 54/334 (32, Marian Dragan street). The possible impacts are related with incerase of noise and dust generation.

The project site is surrounded by: pharmaceutical company Farmina, production/repair facilities of Moldelectica, wrought iron production section, the Utlapcar company and Supraten store (*Fig. 3*).

Most businesses enterprises in the area are built 30-40 years ago and are now experiencing a period of profile change, upgrading or liquidation.

No one of this business is expected to be affected during construction and operation.

3.3.3 Social infrastructure

There are all infrastructure facilities in the region: public transport, electricity, water, sewage, Internet, etc.

On North-West of site is situated the Gimnazium "Steliana Grama" at distance of 450 m. Also close to location there are shops, stores, public transport: buses, minibuses, trolleybuses.

The Medical family centers no. 8 and 10, is also situated in this region.

3.3.4 The social aspects of the project implementation

During the project implementation the following social aspects will be taken into consideration:

- a. Contractor's direct and indirect workers (subcontractors), and
- b. Community health and safety.

The General Contractor will develop the own (or integrated) EHS Plan, and this plan will include social aspect, such as EHS Committee, which will include the following aspects:

- 1. Environmental aspects and measures to avoid pollutions,
- 2. Social aspects such as TIP, HIV, STD and other social aspects,
- 3. Equipment failure and maintenance,
- 4. Emergency preparedness and response issues,
- 5. Incidents on sites and nonconformities,
- 6. Changes and new equipment,
- 7. Etc.

Community Health and Safety

The Contractor will develop a Community Health and Safety Plan, which will describe the following aspects:

- Level of noise to be less than 85 dB between o8:00 and 17:00,
- To suppress dust by watering construction area,
- To organize on site a platform for washing wheels in order not to dirt local roads,
- To evacuate construction wastes from site,
- To control all the construction territory by locked gates at the end of working day and provide a security man,
- To install additional traffic signs to inform drivers about speed limits etc.,
- To provide informational leaflet to the school and kindergarden near the construction site about specific risks,
- To install on site The Site Informational Board with all phone data (to be in compliance with applicable RM's requirements).

For better Project implementation is proposed to be implemented a *Mobility and Access Facilitation Plan* (MAFP) will ensure that the mitigation of negative impacts of construction related works on the project population is planned in advance.

The MAFP will include the following activities:

- Measures in accordance with the construction schedule to avoid or minimize impacts
 of construction-related unlikely blocking of access to properties in case of utility
 connections or unforeseen situations
- Procedure for informing local population about construction works
- Construction schedule prepared minimum one month before start the of the construction
- Minimize impact on utilities such as electricity, gas, water supply and sewerage during construction
- Inform local population at least two days in advance on services to be disrupted/cut
 and the duration of the disruptions, also comply to regulations of utility owners
 (service providers)
- Ensure minimal disconnections/disruptions of services such as electricity, gas, water etc.
- Inform local population on time and duration of planned disruption of services
- Ensure that these services are not disrupted continuously and in accordance with regulations of utility owners (service providers)
- In case of prolonged disruption of supply of drinking water, the construction company or its subcontractors or water supply company will supply population with drinking water in specialized tanks
- Ensure exchange of information between future Contractor and the local population.

Communications between local population and Contractor shall be done exclusively through the designated Social specilist. The communication includes installing information boards in each entrance to site.

It is important to raise awareness of the local population (with the focus on vicinity houses) about site safety and proper traffic behavior, on road safety for slow vehicles near areas the construction site (organize meeting with population from surrounding buildings, if requested).

Contractor will provide training and the basic facilities to communities to develop school zone crossing safety procedures, including the use of adult crossing guards to assist children in crossing the road, if necessary, on Ciocana and Maria Dragan streets.

Particularly, addressing TIP issue shell includes but not necessarily be limited to the following:

- A signed statement that Contractor certifies that it is not engaged in, facilitating or allowing TIP, forced labor or child labor for the duration of the contract. Contractor will share TIP Statement with sub-contractors / construction workers for the duration of the Contract.
- Contractor will ensure that TIP will not be tolerated on the part of employees or contract workers and that engaging in TIP is cause for suspension or termination of

- employment contract; accordingly, Contractor will include this provision in the Employment Contracts.
- Raising the level of awareness of employees, and sub-contractors and workers on the issue including providing information on the risk areas and the penalties for involvement in TIP.
- Contractor will display posters at the campsite with contact information to report suspicions or incidents of TIP.
- The distribution of leaflets, posters with contact data of relevant agency, hot-line.

To manage the HIV/ AIDS, drugs consumption issues the followed is proposed:

- Provide HIV and STI prevention materials for construction workers, such as booklets, pamphlets, posters, in local language(s). The poster will contain information in Romanian and Russian languages.
- Toolbox traing on prevention of HIV/AIDS and for construction workers.
- Discourage and penalize abuse of drugs (alcohol and narcotics).
- Target transport workers with high-risk behavior (including young workers).
- Tailor messages to the general workforce, as well as men and women.

Operational Health & Safety (OH&S)

The selected Contractor will develop OH&S Plan in conformity with GD no. 80 for temporary and mobile sites as a separate document to be submitted for approval to the MEPIU and Moldelectrica.

4. Potential environmental impacts and proposed mitigation measures

It should be noted, that the activities planned in the project of the new command center facility are not found in annexes 1 and 2 to Law 86/2014 on environmental assessemnt.

Thus, for activities which are not indicated in Annex 1 or 2 to this Law, the simplified environmental impact assessment procedure for obtaining the *Environmental Agreement* issued by the central environmental authority is established with the submission of the simplified application, without indicating the solutions for the place and type of technologies used, but indicating the possible impact on the environment and the social and economic aspects of this impact (the Section "Environmental Protection" and EMP of the Detail Design documentation should be developed).

4.1 Water resources

4.1.1 Predicted impact of the construction works on groundwater and surface water

The impact of the construction works on water resources depends on (i) natural factors – penetration of foreign substances into natural waters, making them unsuitable for use,

especially after rainwater runoff on the construction site; and (ii) the anthropogenic sources due to human activity – wastewater and landfills.

Therefore, an impact on water quality may be generated by accidental spills of oil products, lubricants, construction materials (paints, oils, solvents and others); washing of trucks and equipment; leakage of wastewater during technological processes (e.g., preparation of solutions and materials used in construction works); inadequate management of construction and household waste on the site and others.

4.1.2 Predicted impact on groundwater and surface water at the operation stage

The impact on water resources at the operation stage depends on the effectiveness and operation of the facility infrastructure. Therefore, wastewater leakages from the faulty sewerage, rainwater and drainage systems, washing vehicles and equipment in unauthorized places, inadequate management of solid household waste, including electrical/technological waste, can all have a negative impact on the water quality.

4.1.3 Mitigation measures

The impact on water resources can be avoided or mitigated by implementing appropriate measures (see *Mitigation Measures Plan* below), including by avoiding accidental spills of fuel, oils, construction wastes, paints, solvents etc.; washing vehicles and equipment in authorized places; waterproofing/sealing and maintenance of water supply and sewerage networks; adequate treatment and disposal of rainwater and prevention of accidental leakage of wastewater; keeping track of the resources used and monitoring the condition of utility engineering networks in accordance with the requirements referred to in the *Connection Report*; development and implementation of the training program on the protection and rational use of water resources.

The impact mitigation measures for the rainwater runoff will be in line with the *Technical* instructions for the organization of disposal of accumulated rainwater (will be provided by specialized municipal enterprise) and refering to the "Environmental Protection" Section of the Detail Design documents.

4.2 Air quality

4.2.1 Predicted impact of the construction works on air quality

The air quality during the construction works depends on several factors, which can cause an increased or prolonged impact of dust, exhaust gas and smoke pollution on the sensitive receptors.

The potential impact factors are:

- earthworks,
- nature, location and size of the stocks of construction materials piled on the site
 and the storage time on the construction site,

- frequency and scale of dust, exhaust gas and smoke generating activities, including fuel combustion in engines; cutting, milling and grinding,
- the need to bring concrete crushers or cement dosing machines on the site,
- the number and type of vehicles and equipment necessary on the construction site,
- the potential level of dust, mud and gas generation caused by the movement of vehicles,
- weather conditions.

During the construction works, dust must be reduced by using water spraying and/or dust absorption devices/screens/filters. The burning of construction materials/waste on the site is strictly prohibited. In case of transporting any kind of dusty material to the construction site, the load must be moistened or covered. During the dry season of the year the dust on the construction site will be reduced by wetting the ground. All the access roads to the construction site will be paved and arranged so as to prevent slips, mud, puddles etc. Vehicles and equipment will be maintained properly with all updated technical revisions in place. The workers must be trained accordingly and have appropriate protection clothes and equipment, breathing masks etc.

4.2.2 Predicted impact on air quality at the operation stage

During the operation stage, the negative impact on air quality can be caused by the inefficiency and reduced functionality of the thermal-energy sources; the exhaust gases from vehicles and the condition of vehicles; the pollutants produced by inadequate waste management in the command center facility etc.

4.2.3 Mitigation measures

The negative impact on air quality can be reduced by implementing adequate measures (see *Mitigation Measures Plan* below), such as: making the thermal-energy sources comply with the quality standards having the *Authorization for pollutant emissions* in place; keeping track of and reporting on the use of resources; appropriate management of household waste; proper maintenance and operation of vehicles and others.

4.3 Soil and subsoil

4.3.1 Predicted impact of the construction works on soil and subsoil

Most of the impact on soil is expected to be caused by the excavation/topsoil stripping and site landscaping works. During the construction works, soil compaction can occur in areas adjacent to the site, as well as soil contamination caused by leakage of fuels, other dangerous substances and products.

Given the weather conditions, mainly the heavy rains, the high content of dust particles in the soil, the soils around the construction site can be affected by erosion, including gully erosion.

Among the effects that can have a negative impact on the soil cover around the construction is soil compaction on the access roads used by heavy vehicles (dumper trucks, bulldozers, excavators, graders) during the construction works.

Soil pollution will be insignificant if all the requirements of the environmental legislation and the provisions of the properly coordinated and approved design documents are fully complied with.

4.3.2 Predicted Impact on soil and subsoil at the operation stage

Given that the new command center facility will be built on a land with poor soil productivity or without natural soil cover, a minor or no impact on the soil cover is expected during the operation stage. The equipment and vehicles used at the operation stage, such as the transport vehicles, can be sources of soil pollution because of exhaust heavy metal emissions and accidental oil or fuel spills.

4.3.3 Mitigation measures

Adequate measures will be implemented to prevent and reduce the negative impact on soil resources (see *Mitigation Measures Plan* below).

During the construction works, the excavated material will be piled in specially designed places near the future construction or on temporary platforms. The fertile soil (if any) will be stored in accordance with the requirements of the national legislation and will be used rationally. Soil compaction on the land adjacent to the construction site and spills of fuel and other environmental hazardous substances and products during the technological process must be avoided.

To reduce soil pollution, before any construction works start, workers must receive training on soil protection measures, how to avoid accidental pollution and unjustified compaction. Finally, the construction and household waste will be managed properly, separate collection points will be arranged etc.

4.4 Noise pollution

Noise is a major risk factor as far as safety, health and comfort is concerned. In the construction industry, there are activities that involve a noisy environment. Workers can be exposed not only to the noise resulting from their work, but also to the ambient or background noise generated by other activities in the neighbourhood.

4.4.1 Noise emission during construction works

The construction works on the site include works that can be carried out outside, on wider and open areas, and inside narrow and limited spaces. Because of the variety of the construction works it is necessary to make a careful analysis of the types of equipment to be used, technological processes and working time and activities in order to characterize the

noise and vibration sources identified in vehicles, equipment and tools and specific technological processes.

During the construction works, often construction devices and equipment will be used, such as excavators, stabilizers, concrete pumps, equipment that creates vibrations, loaders and other heavy equipment. Even if the noise level is expected to increase significantly during the works, the potential impact will be short-lived. The legal requirements on the noise level at the site border must also be complied with.

The direct impact on workers can be characterized as follows:

- the influence of noise and vibrations on the workers handling technological equipment in cabins, on platforms, at the indoor or outdoor workplace.
- the influence of noise and vibrations on workers caused by the machine-working environment interaction during the technological processes.

Finally, because the construction site is located about 50 m away from a sensitive area – residential area (Maria Dragan Street), the noise levels will have to not exceed the permissible exposure limits indicated in the Construction Rules E.04.02-2006 (for the day time – 55 dBA, and for the night time – no construction works will be carried out). The noise emissions caused by the construction works are not expected to have a significant negative impact. There may be a minor local impact on the existing local urban fauna around the construction site.

4.4.2 Noise emissions at the operation stage

At the operation stage, noise can cause discomfort for local staff and visitors, and even to the deterioration of their health and is a risk factor at the workplace.

4.4.3 Mitigation measures

Some of the noise prevention and mitigation measures follow below (see Mitigation Measures Plan below).

Other noise mitigation measures are:

- organization of work so as to limit the time spent in noisy areas,
- planning of the noise-generating activities so as they affect fewer workers,
- implementation of work schedules that help keep exposure to noise under control,
- the use of sound absorption materials to reduce noise.

The noise assessment and mitigation measures at the operation stage could include:

- identification and removal/minimization of noise-generating sources,
- monitoring and measuring the noise level,
- technical and organizational measures aimed to reduce the noise level,
- installation of appropriate signs warning about high noise levels,

training for staff on exposure to noise hazards, etc.

4.5 Wastes generation

4.5.1 Potential sources of wastes on the construction site

The construction works can generate wastes, including construction (solid and liquid materials, packaging, parts etc.) and household wastes, as well as spills of fuel and oil, cement paste and suspensions, bitumen and solutions, etc.

By its origin, wastes can be classified into the following categories:

- Technological waste, which in turn can be inherent waste, including the material resulting from excavations for new constructions, building utility and road networks, and made of topsoil, sand and gravel; concrete and asphalt; metallic waste resulting after maintenance repairs of machinery and equipment, etc.
- Toxic and hazardous waste resulting from the use of a variety of materials considered toxic and hazardous, such as gas, oil, fuel used for equipment and vehicles, gasoline, lubricants (oils), paints, solvents and other chemical substances. While using them, workers must comply with the environmental safety requirements. This waste must be stored in special places and disposed of to the premises of the company providing such services. Asbestos containing materials (ACM) will not be used in new construction (see Annex 4)
- Household waste produced by construction staff, such as paper, plastic, bottles, food waste etc. They will be collected and stored temporarily in a special place, in garbage bins/containers with lids and will be transported and disposed of in the municipal landfills.

Recyclable waste will be collected and recycled by recycling companies (on the contract base).

Some issues and measures related to the adequate waste management are described below (see Mitigation Measures Plan below).

4.5.2 Waste management at the operation stage

The estimated amount of solid household waste expected to be produced by the new facility is 0.2 m₃/day or 70,0 m₃/year for which special containers will be needed. The waste will be collected separately in a returnable containers in a special place designed for waste collection and will be disposed of on the approved landfill based on an agreement signed with the specialized municipal company.

The waste estimates and the proper waste management measures will be included in the *Environment Protection* component of the Detail Design documentation.

4.6 Energy efficiency

Energy efficiency is a strategic objective of the national energy policy. It will be achieved by:

- introducing advanced energy efficiency technologies/processes;
- using energy efficient equipment and devices;
- saving energy resources and reducing green gas emissions;
- reducing the impact of the transport, distribution and consumption of all forms of energy on environment, etc.

4.7 Archaeological and cultural heritage

Any artifacts, sites, object or other possible "chance finds" encountered in excavation or construction must be noted, registered, and protected and responsible officials contacted as described bellow. The works should be stopped until the Inspection from the Ministry of Culture visits the site.

The required procedure when historic or archeological materials are discovered is that workers have to stop works, and relevant persons must be notified, namely surveillance engineer, Investor/ownerrepresentative, project design representative. The notification must be done in shortest time possible from the moment of discovery, as well as the notification towards Ministry of Culture.

Environmental Protection Measures must follow procedure if above mentioned items are found, their collection and relocation, possible design changes and monitoring. If significant sites are found, works activities can be delayed, temporarily stopped or modified to account for such finds, as per rules and regulations.

Each member of the Contractors (workers) should be alert for evidence of significant items that may be found and each worker should be empowered to shut down construction activity immediately if any item of interest is found.

4.8 Social impact

The exact location, size and design of the Contractor's Yard and Camp are unknown at this point of time. These decisions will be taken by the Contractor and the construction of the site including all related facilities such as power supply and sanitation will require a permits from the local authorities (see procedures described above (sections 1 and 2, Tab. 1)). Nevertheless, on 8 Ciocana str. is sufficient space for a Camp. The Project encourage using of existing facilities in the city against to construct a camp.

Construction will involve site clearance and site preparation, including the provision of site drainage which may involve in vicinity the vegetation loss, risk of soil erosion, soil contamination, surface water and groundwater pollution etc. Site facilities will inter alia include offices; facilities for the accommodation of workers and catering, storage areas for fuel and other materials, workshop areas / maintenance areas; areas for waste management, parking areas for construction machinery, etc.

If not appropriately sited, designed and managed such facilities can cause pollution of the natural environment (soil, water and air) which can reach well beyond the footprint of the actual site. Such sites can also cause temporary nuisance for nearby local communities (e.g. through noise, dust, vibration, aesthetic nuisance etc.) and can adversely impact on public health.

Risk of fires and explosions. Risk of fires and explosions are mainly limited at the storage areas for fuels and lubricants. In these areas there may be an increased risk for public safety and workers if necessary precautionary measures are not followed. This could lead to injuries of workers and people visiting or passing by the site and may also cause damage to facilities.

Public safety and traffic safety. Intensified traffic of heavy machinery and trucks to and from the construction site, increased traffic along acces route and at demolition site have potential to increase the risk of traffic accidents.

Construction sites that are inappropriately secured can create additional safety hazards – especially during the night.

Worker's health & safety. Site construction bears many dangers and there is a risk that workmen - or visitors - may be injured at the construction and demolition sites if necessary safety and occupational health rules or standards are not being followed. Excessive noise, dust or sun exposure can also be critical issues during construction.

Gender sensitization for Contractors at the outset of the construction works, specific provisions in the contract clauses, such as reconciliation of work and family life is very important. This will ensure that women with small children of kindergarten age are not discriminated in employment. This means that once employed, women with children of kindergarten age would not be forced, under the threat of dismissal, to start work at very early hours when the educational institutions are not open yet.

Contractors should be required to arrange for needed training for its workers and be sensitized and aware of diseases associated with human mobility. Provisions should be there in place related to the prevention of human trafficking, including but not limited provisions in the employment contract requiring workers to adopt adequate behavioral patterns. The awareness on trafficking in persons for workers, HIV-AIDS and STD should be stipulated in the contract clauses.

Community participation and monitoring. Community participation and monitoring will be essential during the construction phase. Communities are willing to be regularly informed about important matters such as progress in construction works, to provide information on unknown serious issues such as noise problems, unauthorized storage of construction materials, environmental damage caused by the contractor.

5. Institutional and Implementation Arrangements

The Ministry of Economy and Infrastructure (MoEI) will take overall responsibility for project implementation, as owner of SE Moldelectrica and chairman of Moldelectrica's board. The

MoEI has good and long experience in successfully oversighting implementation of Bank funded as well as supporting TA activities. The Moldovan Energy Projects Implementation Unit (MEPIU), which is the MoEI's fiduciary and safeguards agent, will lead day to daily project implementation in accordance with the Operations Manual (OM). It is staffed with highly qualified and experienced professionals, including technical, fiduciary, and also safeguard aspects. MEPIU has a qualified environmental specialist and will soon hire a social specialist. The Bank will provide regular training and guidance on safeguards to the existing/newly recruited safeguards staff to strengthen/build their capacity to manage safeguards risks and conduct due diligence related to Bank safeguards policies.

MEPIU will follow the mechanism of development and execution of environmental documents in line with the requirements of environmental legislation, good international practice and the World Bank OP 4.01 (*Annex 4*).

MEPIU will have to ensure a close coordination with all relevant local authorities, especially in establishing and operationalizing the GRM to be used by project-affected people for any disputes (including boundary) that may arise during project implementation. The Bank team will closely monitor ESMP implementation, providing, when needed, relevant assistance.

Environmental Monitoring and Reporting during implementation will be carried out by the MEPIU's safeguards specialist who will provide information on the project environmental-social impacts and the effectiveness of mitigation measures. Such information will allow corrective action(s) to be implemented if and when they are needed. MEPIU will report the status of compliance in their regular (semiannual) reports to the World Bank on project implementation and during periodic World Bank supervision visits. In cases of non-compliance, the safeguards specialist will investigate the nature and reason(s) for non-compliance and decide whether remedial actions to bring a sub-project into compliance should be implemented, or whether financing should be suspended.

Appropriate training on Bank safeguards will continue to be provided under the project to local officials, contractors, and community representatives.

6. Grievance Redress Mechanisms

Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level *Grievance Redress Mechanisms* (GRM), including the MOEI and Moldelectrica public relations departments or the WB's *Grievance Redress Service* (GRS).

The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond.

Institutional channels:

The petition-related procedure is regulated by the Law 190/1994 on petitions and other regulations in this field.

The petitions may be submitted to the MoEl Public Relation Department:

- by webpage https://mei.gov.md/ro/content/petitia-line
- by post to: Piata Marii Adunari Nationale, 1, Chisinau, MD-2033, Ministerul Economiei si Infrastructurii
- by fax: +373-22-234064
- by e-mail: secretariat@mei.gov.md
- by delivering them in person to the MOEI office.

The petitions may be submitted also to the Moldelectrica Public Relation Department (webpage http://www.moldelectrica.md/ro/about/contacts). Any comments or concerns can be brought to the attention of MOLDELECTRICA both verbally (by phone +373-22-253396) and in writing (by post or e-mail⁵), by filling in a notification form. Forms can also be accessed online on the MOLDELECTRICA website (www.moldelectrica.md).

For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

7. Environmental and Social Management Plan

The Environmental and Social Management Plan (ESMP) makes an evaluation of the natural framework (soil, water, biodiversity); assesses the potential impact on the environmental components, water quality and the waste generation impact; identifies relevant mitigations and monitoring measures to be implemented during the project implementation (see *Tab. 3* and *Tab. 4*), as well as ways to involve local stakeholders and decisionmakers. Additionally, it identifies the legal requirements to the project and the construction permits and authorizations that are needed to be ensured.

ESMP covers all the project stages – design, construction, putting into operation and operation and maintenance of the facility.

7.1 Mitigation measures plan

During the project activities implementation, natural resources will be used, which will affect the soil cover, wastes will be generated and other harmful effects related to the civil construction works and to the functioning of the new facility will occur. In this context, specific measures to prevent and minimize the negative impact of planned project activities have been developed and proposed for implementation (*Tab. 3*). It should be noted, that in order to make the proposed measures more effective, the potential impact and appropriate

⁵ Project Manager - Veaceslav Zastavneţchi, Deputy Director, IS Moldelectrica: zastavnetski@moldelectrica.md; Social and Environmental Issues - Nelly Melnicenco: melnicenco@moldelectrica.md; Technical aspects - Octavian Ciobîrcă: octavian.ciobirca@moldelectrica.md.

prevention and minimization actions will be regularly updated during the implementation of the Project (see **Tab. 2**).

7.2 Environmental monitoring plan

The mitigation measures proposed in EMP will be carried out by the responsible units during the implementation of the project. In order to verify the proper implementation of these measures, environmental monitoring is essential.

The monitoring will: i) track and report on the effectiveness of the mitigation measures and responsibilities identified and achieved; (ii) inform about the need to extend, increase or adjust mitigation measures; (iii) identify any new areas potentially exposed to impact that have not been considered in the EMP.

The monitoring will begin with the start of construction work and implemented in all phases of the project. A summary of the Environmental Monitoring Plan is presented in *Tab. 4* below.

It should be noted that this EMP is a general one for the whole project and the implementer will take it into account and will develop detailed monitoring plans for the specific interventions of the project according to the detailed planning of the project (ref. *Tab.* 2).

7.3 Public consultation

The Law no. 1515 on environmental protection (1993)⁶ requires that outreach activities are carried out in the project implementation area. On the other hand, the Law no. 86 on environment impact assessment (2014) does not require holding a public consultations campaign. Therefore, the outreach efforts will include on-site public consultation meeting, publications and media coverage of the project/construction activities and installation of an informational panel (billboard) on the construction site⁷ to inform the population and visitors about the construction of the new facility and project implementation data.

The public consultation meeting on ESMP together with the people who may be affected by the project activities and the local authorities was organized by MEPIU on December 27, 2018. A summary report of the local consultation is attached as Annex 5 together with the List of participants.

Also, the ESMP was published and made available to the public on the website of Moldelectrica, starting with December 19, 2018.

Invitations and anouncements were sent to all stakholders, published on Moldelectrica and MEPIU web sites, sent to civic.md – local NGOs portal. More details are described in *Public Consultaion Report* (Annex 5).

⁶ Law no. 1515 of 16.06.1993 on environment protection. Published on 01.10.1993 in the Parliament Monitor no. 10, art. 283.

⁷ According to Ministry of Construction Order no. 71 of 01.07.2015.

During the public consultation, ESMP was presented brefly for each preparatory and construction activities, each potential pollutant or risk factor being monitored and measures to mitigate their effects.

During the site preparation for construction activities and the construction period, the Contractor will submit monthly reports to the MEPIU with information on temporary traffic regulation, water or energy regime, start date of construction works and expected duration, weekly program of working hours, opening jobs for construction, etc., when relevant to the community, will be revealed well in advance on the Moldelectrica website and on-site informational boards.

Also, MEPIU through its environmental specialist, will monitor the situation of compliance with the ESMP during the execution of the works, as well as the necessary measures to be taken in the event of unforeseen circumstances. The ESMP will be updated periodically and coordinated with all implementing partners.

Tab. 3: Mitigation Measures Plan

| Stage | Potential risk, impact | Suggested mitigation measures | Responsable |
|-------------|---------------------------|---|--------------|
| Design | Overall impact on the | Feasibility, topographic, geological, pedological and oth. studies; | Beneficiary |
| | | Performing the pre-design environmental assessment of the planned activity ("screening" | 1 |
| | components of the project | 19 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / | |
| | area | private projects on the environment); Environmental Impact Assessment for planned activity; | |
| | | Coordination and approval of design activities in accordance with national requirements and | |
| | | procedures in force; Elaboration of the Section "Environmental Protection" of the Detail Design | |
| | | according to the Construction Norms in force, including adjacent landscaping solutions and energy efficiency; | |
| | | Elaboration of mitigation measures and environmental monitoring plans for the construction and operation stages; | |
| | | • Ensure the State Ecological Expertise of the Detail Design, and Authorization of Construction Activities in accordance with national procedures | |
| Constructio | Loss of soil resources, | Compliance of the construction Detail Design with the national environmental, industrial safety, | Construction |
| n | land/soil degradation and | construction, architectural, technological and public health regulations | company |
| | pollution | Location of building in place with low soil productivity | |
| | | Proper design to minimize area under construction | |
| | | If unfeasible, ensure soil protection through dead and live soil protection structures | |
| | | Dislocate excavated fertile topsoil (if any) to adjacent agricultural lands | |
| | | Incorporate protective design features (e.g., drainage structures and plant vegetation or slopes) | |
| | | A proper rainwater/drainage system should be installed in order to exclude the flooding potential, landslide and/or erosion processes | 5 |
| | | Avoid, where possible, cutting of trees and other existing local vegetation, etc. | |
| | Noise pollution | Organize work so that time spent in noisy areas is limited | Construction |
| | | Planning the noise-producing activities so that their performance affects as fewer workers as possible | company |
| | | Implementing work programs to control exposure to noise | |
| | | Use of sound absorbing materials and filters/barriers to reduce reflected sounds | |
| | Air pollution | During construction activities it is necessary to reduce dust by spraying with water and / or | Construction |
| | | installation of dust absorption devices | company |

| Stage | Potential risk, impact | Suggested mitigation measures | Responsable |
|---|---|---|--------------|
| | | It is strictly forbidden to burn building materials / waste on the ground | |
| | | • For transporting any other dusty material at the work site, it is necessary to moisten or cover | |
| | | the load | |
| | | • Dust reduction on land during the dry season of the year is done by moistening the soil surface. | |
| | | • On the site, all routes will be arranged so that they do not lead to skidding, mud, ponding, etc. | |
| | | • Vehicles and machines will be properly maintained and will have up-to-date technical revisions. | |
| | Workers who carry out the work must wear protective clothing and breathing masks. | | |
| Health and safety hazards • Ensure construction workers are given safety instruction, equipment and working cloth | | Construction | |
| Special instruction/warning signs must be installed on the facility | | company | |
| Ensure safety officers on site | | | |
| | | • Provide appropriate sanitary and solid waste disposal facilities for use by construction workers | |
| | | Provide first aid and protection kits | |
| | | • Ensure effective signage for the public and ensure that all exposed construction areas are | |
| | | barricaded from public access | |
| | Wastes generation | Waste collection and disposal pathways and sites will be identified for all major waste types | Construction |
| | | expected from construction activities | company |
| | | Mineral/solid construction and demolition wastes will be separated from general refuse, | |
| | | organic, liquid and chemical wastes by on-site sorting and stored in appropriate places | |
| | | Construction waste will be collected and disposed properly on authorized landfills by licensed collectors | |
| | | | |
| | | • The records of waste disposal will be maintained as proof for proper management as designed | |
| Operation | Excessive energy | Whenever feasible the contractor will reuse and recycle appropriate and viable materials Clab grating the plan and implementing the operate officiency measures in the activity of the | Beneficiary |
| Operation | consumption | Elaborating the plan and implementing the energy efficiency measures in the activity of the new command center | Бенепсы у |
| | | Use of electrical installations and high energy efficiency equipment | |
| | | Optimal and high-efficiency lighting can reduce the energy consumption | |
| | | • Training the local staff in good practice on equipment maintenance and energy efficiency, | |
| | | including optimal air conditioning | |
| | | • Design and implementation of the energy management system in line with good international | |
| | | practices | _ |
| | Waste generation, | Implementation of the appropriate waste management system, separate collection and | Beneficiary |
| | including special (electro- | storage, provision of recycling and reuse (if applicable); Signaling and special marking; | |
| | technical, etc.) | Inventory and record | |

| Stage | Potential risk, impact | Suggested mitigation measures | Responsable |
|-------|-----------------------------|--|-------------|
| | Excessive consumption | Ensure the proper water consumption recording system and means | Beneficiary |
| | and contamination of | • Planning and implementation of adequate maintenance measures of the distribution system, | |
| | water resources | avoiding leakage and excessive consumption, etc. | |
| | Air pollution (heating and | • compliance of the thermo-energy sources with the quality standards with obtaining the | Beneficiary |
| | ventilation systems such as | | |
| | car transport are the major | inventory and reporting of the resources consumption | |
| | sources of pollutant | the proper management of household wastes | |
| | emissions in air) | • maintenance and operation of the transportation means in the appropriate way, etc. | |
| | Noise, acoustic pollution | • identification of sources generating noise, | Beneficiary |
| | | monitoring and measurement of noise levels, | |
| | | monitor the health state of staff and inmates, | |
| | | applying technical measures to reduce the noise level, | |
| | | appropriate signaling of high-noise locations, | |
| | | • training employees and inmates about the risks they are exposed to, etc. | |
| | Safety and human health | Regular training on safety and health | Beneficiary |
| | | Informing the local staff about the exceptional situations | |
| | | Displaying in an open place the Action Plan in exceptional circumstances | |
| | | Training on individual and collective protection procedures and measures applied in | |
| | | exceptional situations | |
| | | Provide protection equipment according to the requirements and the rules in force | |
| | | Annual medical examination of the company personnel, etc. | |

Tab. 4: Environmental Monitoring Plan

| Stage | Risk to be monitored | Place of monitoring | How is the risk to be monitored? | When is the risk to be monitored? (frequency)? | Cauze of monitoring | Responsability |
|--------------|---|-----------------------|--|--|--|--|
| Construction | Loss of soils | Construction site | Visual | During excavation works and transportation | In compliaing with Detail Design and official autorizations | Construction company, beneficiary |
| Construction | Air quality: dust, smog etc. | On-site | Visual monitoring | Dayly during works | Prevention of air pollution and health risks | Construction company, State Construction Inspection (SCI) |
| Construction | Construction wastes | On-site | Regulary visual inspection | Weekly during works | Prevention of onsite soil and water pollution, minimizing waste generation | Construction company, beneficiary |
| Construction | Level of noise | On-site | Regulary inspection | Dayly during works | Prevention of risks for human health | Construction company, beneficiary |
| Construction | Human health and safety | On-site | Regulary supervision, registering the accidents and risk events, registering trainings, work planning etc. | Continue | Safety and health protection of workers, accident prevention | Construction company, beneficiary, SCI, State Labor Inspection (SLI) |
| Construction | Noise and dust (transportation activities) | On-site, access roads | Regulary supervision | Unannounced inspection during transportation | Avoiding dust and noise; avoiding damage and pollution of the infrastructure | Construction company, beneficiary, National Patrolling Inspection (NPI) |
| Operation | Air quality: dust, smog, air pollutants etc. | On-site | Visual monitoring | Dayly during operation | Prevention of air pollution | Construction company, beneficiary, Inspection for Environmental Protection (IEP), Public Health Center (PHC) |

| Stage | Risk to be monitored | Place of monitoring | How is the risk to be monitored? | When is the risk to be monitored? (frequency)? | Cauze of monitoring | Responsability |
|-----------|---|--------------------------|--|--|--|--|
| Operation | Air pollution generated by technological equipment | On-site, parking area | Regulary technical inspection | Dayly during operation | Prevention of air pollution | Construction company, beneficiary, SLI, PHC |
| Operation | Special wastes and materials (electrical/office equipment etc.) | On-site | Regulary inspection | Continue | Prevention of risks for human health and environment | Construction company, beneficiary, SLI, PHC |
| Operation | Household wastes | On-site | Regulary visual inspection | Dayly during operation | Prevention of environmental pollution | Construction company, beneficiary, IEP, PHC |
| Operation | Noise level (generated by technological equipment) | On-site | Regulary inspection | Regulary during operation | Prevention of risks for human health | Construction company, beneficiary, PHC |
| Operation | Human health and safety (occupational safety) | On-site | Regulary supervision, registering the accidents and risk events, registering trainings, planning of works etc. | Continue | Safety and health protection of workers, accident prevention | Construction company, beneficiary, SLI, PHC |
| Operation | Noise and dust generated by transport traffic | On-site, access roads | Regulary supervision | Unannounced inspection during transportation | Avoiding dust and noise; avoiding damage and pollution of the infrastructure | Construction company, beneficiary, NPI |

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Regulatory acts

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- Law no. 1515 of 16.06.1993 on environmental protection. Published on 01.10.1993 in the Parliament Monitor no. 10, art. 283
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- Subsoil Code no. 3 of 02.02.2009. Published on 17.04.2009 in Monitorul Oficial no. 75-77, art. no. 197. Effective date 17.07.2009
- The Order of the Ministry of Constructions and Regional Development no. 25 of 23.12.2009 on the approval of the Seismic Zoning Map of the Republic of Moldova (scale 1: 400 000). Published on 14.05.2010 in the Official Monitor no. 72-74, art. no. 277
- The Order of the Ministry of Constructions and Regional Development no. 71 of 01.07.2015 regarding the instalment of the information panel of the construction site.

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Annexes

- Annex 1: Safeguards policies of the World Bank
- Annex 2: Land title and Layout plan
- Annex 3: Environmental guidelines for civil work contracts
- Annex 4: Main issues regarding asbestos containing materials (ACM) to be considered
- Annex 5: Report on Consultation on the ESMP with Interested Parties

Annex 1: Safeguards policies of the World Bank

Below are the key extracts from OP that give the idea of preventive mechanisms of the World Bank and help to understand and analyze information on environmental, social and legal policies.

OP 4.01 Environmental Assessment. EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project. EA evaluates a project's potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation.

EA takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and physical cultural resources); and transboundary and global environmental aspects.

EA considers natural and social aspects in an integrated way. EA is initiated as early as possible in project processing and is integrated closely with the economic, financial, institutional, social, and technical analyses of a proposed project.

OP 4.04 Natural habitats. The Bank promotes and supports natural habitat conservation and improved land use by financing projects designed for environmental conservation. The Bank promotes the rehabilitation of degraded natural habitats and does not support projects that involve the significant conversion or degradation of critical natural habitats.

OP 4.09 Pest Management. In assisting borrowers to manage pests that affect either agriculture or public health, the Bank supports a strategy that promotes the use of biological or environmental control methods and reduces reliance on synthetic chemical pesticides.

The Bank requires that any pesticides it finances be manufactured, packaged, labeled, handled, stored, disposed of, and applied according to standards acceptable to the Bank. The FAO's Guidelines for Packaging and Storage of Pesticides (Rome, 1985), Guidelines on Good Labeling Practice for Pesticides (Rome, 1985), and Guidelines for the Disposal of Waste Pesticide and Pesticide Containers on the Farm (Rome, 1985) are used as minimum standards.

OP 4.11 Physical Cultural Resources. This policy addresses physical cultural resources, which are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources include everything that remained after ancient inhabitants (holy places and battlefields) and unique natural sites such as waterfalls and canyons.

ESMP for Moldelectrica new building

The Bank does not support projects threatening cultural resources that are property of population. The Bank supports only those projects that are located or designed in such a way as to prevent damage to the environment.

OP 4.36 Forests. Management, protection and sustainable development of forest ecosystem and its resources are necessary for reducing poverty and sustainable development.

The Bank does not finance plantations that involve any conversion or degradation of critical natural habitats due to potential risk to biodiversity.

The Bank may finance harvesting operations conducted by small-scale landholders, by local communities under community forest management, or by such entities under joint forest management arrangements, if these operations:

- (a) have achieved a standard of forest management developed with the meaningful participation of locally affected communities, consistent with the principles and criteria of responsible forest management; or
- (b) adhere to a time-bound phased action plan to achieve such a standard. The action plan must be developed with the meaningful participation of locally-affected communities and be acceptable to the Bank.

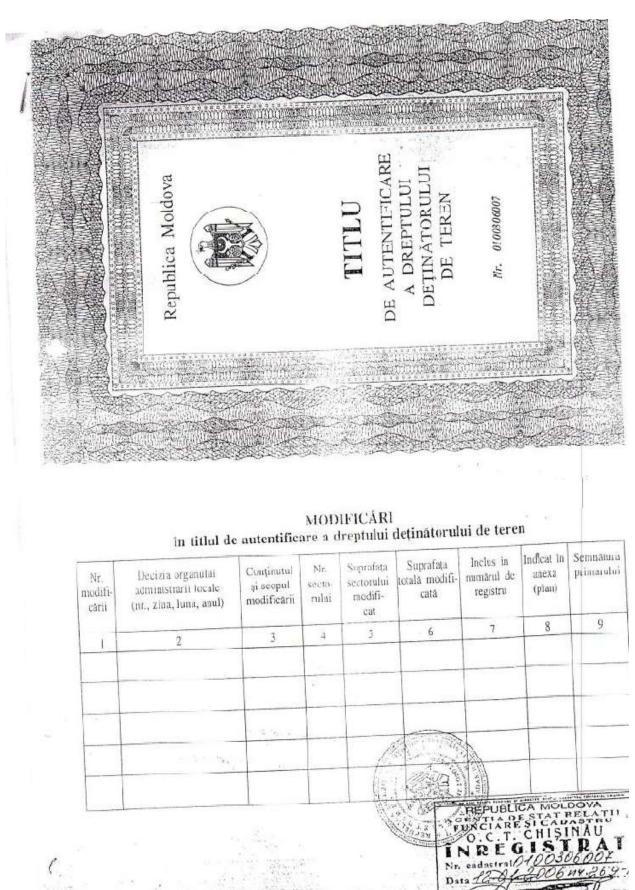
OP 4.37 Safety of dams. The Bank distinguishes between small and large dams. Small dams are normally less than 15 meters in height. This category includes, for example, farm ponds, local silt retention dams, and low embankment tanks. For small dams, generic dam safety measures designed by qualified engineers are usually adequate.

OP 7.50 Projects on international waterways. This policy applies to the following types of international waterways: (a) any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more states; (b) any tributary or other body of surface water that is a component of any waterway described in (a) above.

This policy applies to the following types of projects: hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways as described above.

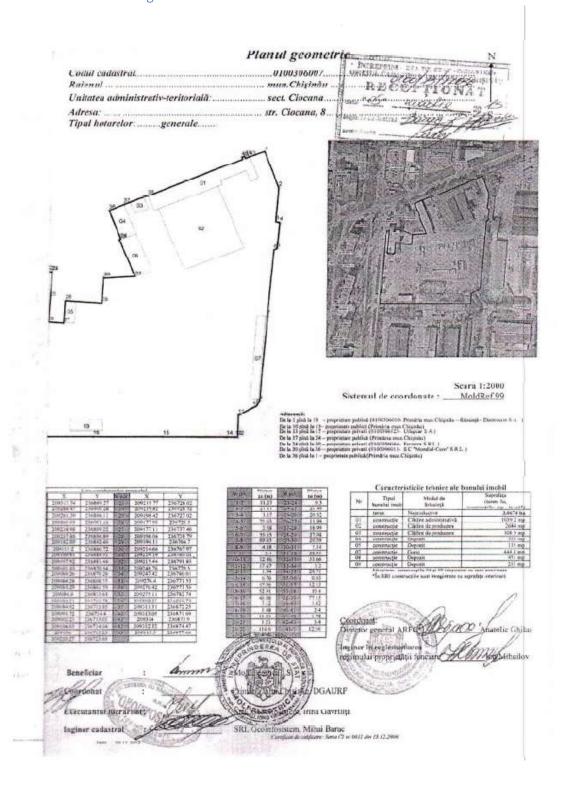
OP 7.60 Projects in disputed areas. Projects in disputed areas may raise a number of delicate problems affecting relations not only between the Bank and its member countries, but also between the country in which the project is carried out and one or more neighboring countries. In order not to prejudice the position of either the Bank or the countries concerned, any dispute over an area in which a proposed project is located is dealt with at the earliest possible stage.

Annex 2: Land title and Layout plan



| Íntoen Jejinŭ Jufnac | | L'S L'Allatic | nr. 4237 d | indicate în plan. 3. Scopul repertizăr i tercaului 4. Trecut în Registrul cadastra | repartizat în (pi pămînt cu o suprafa ă totală de | Nr. 11/12-24 |) Pl. | our k | definătorului |
|--------------------------------|--|-----------------|---|---|---|------------------------------------|---|---|---|
| regimului proprietă i funciare | Irginerul pentrureglementarea | The said | din 22 mai 2001 22 mai 2001 (data diberani, cu cilre si litere) | indicate în plan. 3. Scopul repartizăr i tereaului Rază de transport auto 4. Trecut în Registrul cadastral al definătorilor de tereaur: la | folosință (propretate, poseum, Idosmia) afa ă totală de 3,231 | (comuna, orașul) cin 12.04.2061 | (adress persosnei fizice sau juridice) decizin Primăriei mun. Chişmău | [peisomei līzice sau jurid.ce] mun.Chişunău, str. Ciocana, 8 | Întreprinderea de Stat "Autoelectrotrans" |
| ează re la organul | | 1520 | | sport auto | ha în hotarele | deținătorului i s-a | mäu | | 15 |
| | Adresa lotului mun. Chişinău, str. Ciocana, 8 Enumerarea adiacenților Adiacenții sunt indicați pe planul cadastral | 3 (c- 01 3 T) A | Oragan | | | ALES VIET | • | | Data masurar i: 12.08. 997 Cod cada |
| | işinöu, str. Ciocana, 8 Enumerarea adiazentilor ınții sunt indicați pe plan | | | 907 C | 3// | | | | |

ACT de constatare pe teren la modificarea la modificarea planului terenului or.Chişinâu "02" noiembrie 2012 Prezentul act este întocuiit de mine, Barac Mihail, apecialist al SRL "Geoinfosistem" in.cadastral La cererea de modificare a planului cadastral a sectorului de teren 0100306007, mun.Chisinău, sect, Ciocana str. Ciocana, 8 cu destinația Neproductive În prezența reprezentantului solieitamului : "Moldelectrica" ÎS . c/f 1002600004580 În rezultatul cercetărilor s-a stabilit: 1. Planul cadastral si/sau geometric actual al sectorului de teren a fost întocmit <u>în mod selectiv</u> Planul cadastral şi/sau geometric existent <u>nu corespunde</u> cu hotarele de fapt la sectorului de teren 3. Necorespunderea planului cadastral şi/sau geometric cu hotarele de tapt a sectorului de teren se datoreaza modificării hotarelor (gregation le elaboreo planulu undarral și sau geometric oxusuri, modificarea suroreclarit a hosarelor, sau din alte. 4. Se propuiu următoare le modificari ale planulul cadastrat și/sau geometric: A modifica planul initial, conform măsarărilor curente, modificînd suprafata terenului. Prin schimbarea planului geometric nu se ating interesele altor persoane, 5 În rezultatul modificărilor suprafata sectorului de teren va constitui în conformitate cu noul plan geometric, care va fi parte componentă a prezentului act: pînă la modificarea plumului 3.231 ha In urma modificării planului 3.0674 ha 0100306007 6. Persoanele prezente la întocmirea actului de constatare pe terea și la întocmirea noului plan geometrie sunt de accerd cu propunerile respective, acceptă poziția hotarelor pe teren (în natură) și confirmă că prin modificarea hotarelor nu se efectuează o tranzacție ascunsă și sunt informate că prezentul Act și planul geometric care urmează a fi elaborat, vor fi transmise Oficialui cadastral ternoriar, pentru efectuarea operațiunii respective Executantul lucrărilor Barac Mihall de adificare: Seria CI nr.6011 din 1512.2006 Moldelectrica 15 Titularul de drept asupra terenulo Titularii de drept asupra terenur Electrocon S. 0100306010 Utlapcar SA 0100306123 0100306044 rarmina SRL Mondial-Com 0100306011 Primărio mun Chisinău, DGAURF



Annex 3: Environmental guidelines for civil work contracts

Contractors will be obliged to apply environmentally sound construction standards and procedures. All civil works contracts will have the following environment-protecting provisions:

- a) Take measures and precautions to avoid adverse environmental impacts, nuisance or disturbances arising from the execution of the works. This shall be done by avoidance or suppression whenever possible rather than abatement or mitigation of the impact once generated.
- b) Comply with all national and local environmental laws and regulation. Assign responsibilities for implementation of environmental actions and to receive guidance and instructions from the engineer or environmental authorities.
- c) Minimize dust emissions to avoid or minimize adverse impacts on air quality.
- d) Maintain foot and vehicular traffic flows and public access to neighboring sites and facilities. Provide markers, lights and temporary connections by bypasses for safety and convenience.
- e) Prevent or minimize vibration and noise from vehicles, equipment and blasting operations.
- f) Minimize disturbance to and restore vegetation where it is disturbed as a consequence of the works.
- g) Protect surface and groundwater and soils from pollution. Appropriately collect and dispose of water materials.

Annex 4: Main issues regarding asbestos containing materials (ACM) to be considered

Asbestos is a group of naturally occurring fibrous silicate minerals. It was once used widely in the production of many industrial and household products because of its useful properties, including fire retardation, electrical and thermal insulation, chemical and thermal stability, and high tensile strength. Today, however, asbestos is recognized as a cause of various diseases and cancers and is considered a health hazard if inhaled.

Because the health risks associated with exposure to asbestos area now widely recognized, global health and worker organizations, research institutes, and some governments have enacted bans on the commercial use of asbestos.

In the European Union the use of asbestos is banned since January 1, 2005, and in Republic of Moldova through a Law #1422/1997 on air protection (amended by Law #141 in 2016) this was banned for new constructions.

Products containing asbestos and which have been installed or were in operation before the date 19 January 2017 can be used until the end of their lifecycle.

Good practice is to minimize the health risks associated with ACM by avoiding their use in new construction and renovation, and, if installed asbestos-containing materials are encountered, by using internationally recognized standards and best practices to mitigate their impact. In all cases, the World Bank expects borrowers and other clients to use alternative materials wherever feasible.

ACM must be avoided in new construction!

Annex 5: Report on Consultation on the ESMP with Interested Parties

Public Consultation Report

Introduction

The proposed Project component includes investment assistance for the new premises center for SE Moldelectrica, and is estimated at about 7,0 M USD. Construction of the new building will be financed by the World Bank, and will include a new command/dispatch center, modernization of SCADA/EMS and Electricity Evidence Management System (MMS), and which will host about 300 employees. The new 5-level building is planned to be constructed on a vacant plot, which is the state property managed by SE Moldelectrica.

The new premises will be built on the eastern part of Chisinau, 5 km far from the city center, at the border with the city industrial zone, on the address: 8, Ciocana Street, Ciocana Sector, Chişinău. The total land area selected for the construction of the new facility with the cadastral number 01003060007 is 1.5 ha.

As of December 2018, the land plot is adjacent to an area with mixed functions (residential, commercial, service delivery, industrial etc.) in Ciocana Sector.

The ESMP is published on the websites of Moldelectrica for soliciting comments and suggestions – http://www.moldelectrica.md/ro/finances/me office building.

Also, public announcements were placed on MEPIU official page several days before the public meeting, on December 19 and 20, 2018 – http://mepiu.md/rom/planul-de-management-pentru-noua-cladire-moldelectrica-1; http://mepiu.md/rom/consultare-publica-proiectul-planului-de-management-de-mediu-si-social-pmms-pentru-constructia-noului-sediu-al-is-moldelectrica

A period till March 31, 2019 was announced for receiving of comments and proposals to developed ESMP. Before public consultation meeting on December 27, 2018, no any writing comments were received on Moldelectrica or MEPIU address or MoEI communication channels.

Hard copies of these documents and summary note in Romanian language are accessible to public and at the offices of MEPIU, Moldelectrica HQ and on the Ciocana branch. The disclosure period for the ESMP report was 8 days. Announcements on visible places and informational boards informed the public accordingly.

Public disclosure

Eight days before the public hearing meeting, were organized the disclosure of ESMP document (announcements with the link to document) on the Moldelectrica and MEPIU websites.

Posters with advertisements about the venue, day and hour of public meetings (hearings) for discussing the ESMP document were placed on the billboards of adjacent buildings, and local sites, and other public places.

The evidences of public disclosure of information and announcements are set out in the annexes.

Public hearing

The public meeting was scheduled on December 27, 2018, 3 PM, on 8, Ciocana str. Moldelectrica building.

Total number of participants was 16, from which 19% - women and 81% men (see annexed pictures).

Environmental and Social Consultants (Aureliu Overcenco and Veaceslav Vladicescu) presented at public hearings the following topics inclusive a PPT presentation with inputs of MEPIU specialists and Moldelectrica representatives:

- General information about purpose of ESMP documentation
- Bref description of planned Project activities
- General known elements of the project in the area
- Specific identified possible impacts on the environment and population
- General mitigation measures proposed
- Grievances redress mechanism
- Contact information of project implementation unit and Moldelectrica representatives.

Main comments and proposals

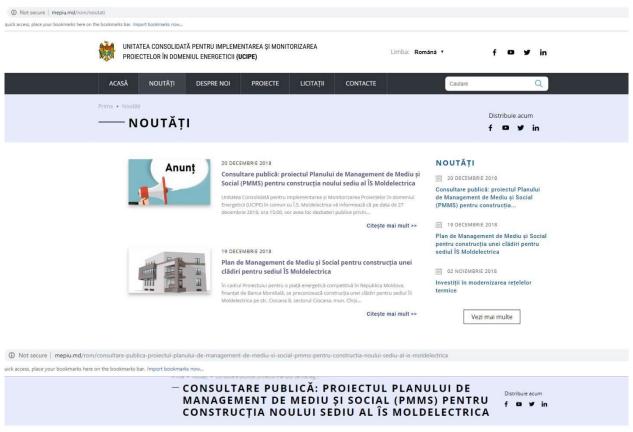
- 1. **Question:** Does access to site will be used by heavy trucks and machinery from Ciocana street or Maria Dragan street?
 - **Answer:** The existing entrance (gate) from Maria Dragan Street.
- 2. **Question:** Do we know exact location, with coordinates and area of new building? **Answer:** No, at this moment just general information is known. The documents for Informative Urbanism Certificate was submitted to mayoralty. Also was explained to participants the future steps for receiving permissive acts before and after detailed design).

Annexes

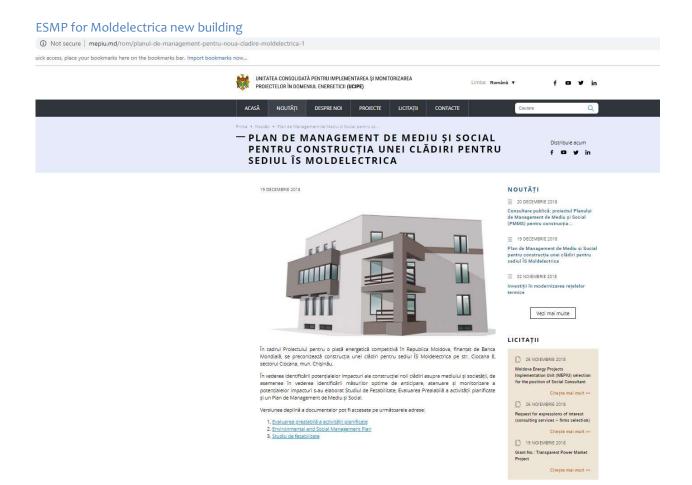
Announcements on web page of MEPIU

MEPIU webpage (published 19 and 20.12.2018) with direct link to ESMP document: http://mepiu.md/rom/planul-de-management-pentru-noua-cladire-moldelectrica-1

http://mepiu.md/rom/consultare-publica-proiectul-planului-de-management-de-mediu-si-social-pmms-pentru-constructia-noului-sediu-al-is-moldelectrica



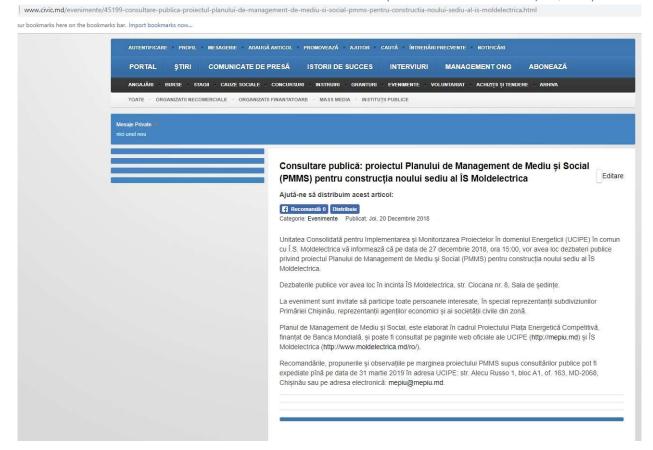




Announcements on web page of Moldelectrica



Announcements on web portal of local NGOs - civic.md



Public announcements (few examples)









Public meeting pictures











List of participants





Consultare Publică

Locația: ÎS Moldelectrica, str. Ciocana nr. 8, Sala de ședințe

Data: 27.12.2018 Ora: 15:00

Proiectul Piața Energetică Competitiva din Moldova

Dezbateri publice privind proiectul Planului de Management de Mediu și Social (PMMS) pentru construcția noului sediu al ÎS Moldelectrica.

| _ | Instituția | Numele Prenumele | Date de contact | Semnătura |
|-----|--------------|-------------------|-----------------|-----------|
| 1 | Utlapars | Peliu Jan | 069162361 | Freb |
| 2 | Farmine | | 069944227 | Liber |
| 3 | Farming | Remye Eugenty | | Store |
| 4 | SUPRATEN | | 079475559 | St Pal |
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