Environmental and Social Management Framework

Environmental and Social Management Framework
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Azerbaijan: Power Distribution Enhancement Investment Program

Prepared by: Azerishig Joint Stock Company
Republic of Azerbaijan

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LIST OF ABBREVIATIONS

WB	–	The World Bank
CFC	-	Chlorofluorocarbons
EA	–	Executing Agency
EARF	-	Environmental Assessment and Review Framework
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
GoA	–	Government of Azerbaijan
GFP	-	Grievance Focal Points
GHG	-	Green House Gases
GRC	–	Grievance Redress Commission
MENR	-	Ministry of Ecology and Natural Resources
PROJECT	–	Proposed Project
PCBs	--	polychlorinated biphenyl
PIU	-	Project Implementation Unit
PMC	-	Project Supervision and Management Consultant
REA	-	Rapid Environmental Assessment
SEE	-	State Policy on Ecological Expertise
SPs	-	Safeguard Policies
TA	-	Technical Assistance

A. INTRODUCTION

1. The Government of Azerbaijan (GoA) has requested the World Bank (WB) to provide funding to support Azerishig Open Joint Stock Company's (OJSC) Power Distribution Enhancement Investment Program (the Investment Program). The Investment Program aims to improve energy efficiency of the power distribution sector in Azerbaijan through rehabilitation and expansion of the aged distribution network. The investment program will (i) improve power supply reliability in the region; (ii) reduce distribution losses; (iii) improve customer service efficiency and quality; (iv) improve operational and financial performance of the regional distribution companies, and (v) promote corporate reform and capacity development in the distribution subsector.

2. The investment program will have three major outputs: (i) rehabilitation of 110 kV, 35 kV, 10 kV, and 6 kV distribution networks including distribution lines and substations; (ii) rehabilitation of 0.4 kV customer service lines and installation of advanced electric meters; and (iii) strengthened institutional capacity of Azerishig OJSC. The components covered under the investment program are expected to consist of:

(i) **Rehabilitation of 110 kV, 35 kV, 10 kV, and 6 kV Power Distribution Networks.** Rehabilitation of 110 kV substations 15 units, 35 kV substations 52 units, 6-10 kV transformer stations 4,004 units; 110 kV distribution lines 150 km, 35 kV distribution lines 400 km, 6-10 kV distribution lines 2,600 km.

(ii) **Rehabilitation of 0.4 kV Customer Service Lines and Meters**. Replacement of 0.4 kV customer service lines 10,154 km including installation of electric meters. The existing 0.4 kV bare overhead bare conductors will be completely replaced with new self-supporting aerial bundled cables (insulated), and the existing poles will be completely replaced with new steel, concrete or wood poles. The new insulated cables will make illegal access to distribution lines and energy theft impossible.

(iii) **Support for Institutional Development, Capacity Building, and Project Management**: including consultancy services for (i) project supervision and management including procurement, engineering support, financial management, social and environmental safeguard monitoring, external audits, and training. (ii) preparing and monitoring of all subsequent tranches under the proposed PROJECT; (iii) support for policy development and capacity building of Azerishig staff.

3. The Program will be financed by WB through loan Under the PROJECT loan procedures of the WB, implementation of environmental safeguards is to be achieved by environmental assessment of every project to be undertaken following the requirements of the World Bank Safeguard Polices, such as OP 4.01, 4.04, 4.12. The proposed WB investments concern investments in existing facilities and will not affect sensitive areas, forests or wetlands, and will be classified as Category B under the WB's Safeguard Polices that will be followed for all projects.

4. This Environmental and Social Management Framework (ESMF) is applicable to all activities to be supported by this PROJECT, and shall in particular govern environmental aspects of sub-projects which have been and will be identified during the project implementation. .

B. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

5. Environmental and social assessment of the project activities shall be undertaken in compliance with World Bank's and national policies, legislation, and requirements of the World Bank. This also includes complying with relevant international agreements.

1. Government of Azerbaijan Environmental Policies, Laws and Regulations

a. *Laws and Regulations*

6. Azerbaijan has a number of laws that include provisions for environmental protection and monitoring, and for the management of environmental issues related to development projects, originating in the constitution (1995). The Constitution is the highest law in the Azerbaijan Republic and prevails over national legislation and international agreements. It stipulates the basic rights of people to live in a healthy environment, to have access to information on the state of the environment and to obtain compensation for damage suffered as the result of a violation of environmental legislation.

7. As in other regional countries, much of the Soviet-era environment-related legislation has been replaced or modified. The Law on Environmental Protection, 1999, is the centerpiece of the new legal structure. Other acts complement it in important ways. Together, the new laws invoke the polluter-pays principle, open the door for the use of economic instruments, partially bridge the gap between existing and international environmental standards, and enhance the role of public awareness, among other new elements.

8. Some of the important laws relevant to the proposed power sector project focusing on environmental impact assessment are described below.

(i) ***Law on the Protection of Environment, 1999:*** The Law of the Republic of Azerbaijan on the Protection of Environment (1999) establishes the legal, economic and social bases for environment protection. The objective of the Law is to project environmental balance, thus: (i) ensuring environmental safety; (ii) preventing hazardous impact of industry and other activities to natural ecological systems; (iii) preserving biological diversity; and (iv) utilizing natural resources properly. The relevant clauses of this Law are:

- Article 35. Ecological requirements set forth natural resources use.
- Article 36. Ecological requirements set forth work protection.
- Article 37. Ecological requirements set forth the placement (location) of enterprises, installations and industrial units.
- Article 38. Ecological requirements set forth the construction and reconstruction of enterprises, installations and other industrial units.
- Article 49. Protection of the earth's climate and ozone layer.
- Article 50. The objectives of the ecological expertise is to identify impacts on environment caused by industrial units, examine the results of such impacts and predict possible impacts, in accordance with environmental requirements and qualitative parameters of the environment.
- Article 54. The units controlled by the State Ecological Expertise (SEE). According to Sub-Article 54.2, EIA is subject to SEE review and MENR is responsible for the review and approval of EIA reports submitted by project proponents.
- Articles 81 and 82. Provide for the application of international agreements in case an international institute or body has provisions that are different from those in Azerbaijani legislation.

(ii) ***The State Ecological Expertise (SEE)***: Mandates an EIA for infrastructure development projects. The objective of the SEE is to identify impacts on the environment caused by construction projects, examine the results of such impacts and propose mitigation measures to prevent adverse effects on the natural environment and people's health. It is essentially a stand-alone check of compliance of the proposed activity with the relevant environmental standards (e.g. for pollution levels, discharges, and noise).

(iii) ***Handbook of Environmental Impact Assessment (1996)***: This handbook was prepared by UNDP and it defines the project types requiring Environmental Assessment (EA),

contents of the document on EA roles and, responsibilities of applicant and responsible state organization, procedures, public participation and complaints. It is not a legally binding document but government use it for environmental assessment of the projects. A new draft law on Environmental Impact Assessment has been drafted and is under consideration by the government..

(iv) ***Azerbaijan Environmental and Safety Regulations:*** Other relevant national laws summarized below are:

- Law on Protection of Foreign Investment (1992): This includes a number of safeguards for foreign investors and allows the acquisition of exploration and development rights. Revisions on this Law are planned.
- Law on Use of Energy Resources (1996): This provides the legal, economic and social policy basis for the efficient use of energy resources. The State has the power to control the use of energy resources by State enterprises and organizations, to set policy for efficient energy resource use and, to use a range of mechanisms to promote energy saving technology and equipment. Registration of plans for energy resource use is also addressed.
- Law on Power Engineering (1998): This provides the legal basis for electrical and thermal power generation, transmission, distribution, purchase, sales and consumption. It governs the activities of State power engineering companies, power supply companies, independent power producers and consumers. The relevant State authorities are responsible for licensing, transmission and distribution contracts, pricing, de-monopolization, performance criteria, rules and standards.
- Law on Energy (1999): This covers energy policy objectives, the ownership of resources, control of exploration, development of fields and the construction and maintenance of transport systems. The Law includes a strong commitment to energy efficiency and contains significant licensing provisions.
- The State Program for the Development of the Fuel and Energy Sector of the Azerbaijan Republic (2005-2015): This program was approved by Presidential Decree on February 14, 2005. The Ministry of Industry and Energy has been designated as the coordinating agency for this program. The overall goal of this program is to fully meet demand for power, gas and other energy resources through the continued development of the fuel and energy sectors. The program also focuses on sector restructuring, the installation of modern equipment and the introduction of a management system suitable for operating in a market economy.
- National Program on Environmentally Sustainable Socio-Economic Development: This program covers the period 2003 to 2010 and includes actions to mitigate the impact of the energy sector on the environment, including: (i) the introduction of highly efficient technologies at thermal power plants; (ii) the promotion of modern energy saving technologies in both the production and non-production sectors; and (iii) the development and implementation of national and regional programs aimed at demand management.
- Law on the Electrical and Heat stations 1999: This Law includes the following relevant sections: (i) Section3, which stipulates requirements for construction, reconstruction and exploitation of power stations; (ii) Article 9, which sets emission limits for power stations; (iii) Article 11, which sets limits for noise and vibration; (iv) Article 12, which deals with water wastes; (v) Article 13, which provides measures for decreasing water wastes; (vi) Article 14, which deals with accidents; and (vii) Article 15, which specifies penalties.
- A complete list of relevant laws is given at Table 1.

Table 1: Relevant Laws, Legislations, and Policies in Azerbaijan

SI. No.	Law / Regulation / Policy	Date of Adoption

SI. No.	Law / Regulation / Policy	Date of Adoption
1.	Law of the Republic of Azerbaijan on "Industrial and municipal wastes"	30.07.1998
2.	Law project on "Making changes and supplements to Law of the Republic of Azerbaijan on industrial and municipal wastes"	
3.	President Decree on the application of Law of the Republic of Azerbaijan on "Industrial and municipal wastes"	26.10.1998
4.	Law of the Republic of Azerbaijan on "Energy"	24.11.1998
5.	Law of the Republic of Azerbaijan on "Principles of town-building"	11.07.1999
6.	Law of the Republic of Azerbaijan on "Investment activities"	13.01.1995
7.	Law of the Republic of Azerbaijan on "Foreign investment laws"	15.01.1992
8.	President's Order on "Extra measures for the issues associated to the international conventions and agreements on environment protection in which the Republic of Azerbaijan has joined"	30.03.2006
9.	National Program of the Republic of Azerbaijan on "Environmentally sustainable social-economic development"	18.02.2003
10.	On "Measures for providing the implementation of the commitments The Republic of Azerbaijan has adopted in accordance with the UNFCCC ratified by the Republic of Azerbaijan in January 10, 1995"	30.04.1997
11.	Law of the Republic of Azerbaijan on "Public awareness raising on environmental issues"	10.12.2002
12.	Law of the Republic of Azerbaijan on "Protection of environment"	08.07.1999
13.	Law of the Republic of Azerbaijan on "Obligatory ecological insurance"	12.03.2002
14.	Law of The Republic of Azerbaijan on specially protected natural territories and sites	24.03.2000
15.	Law of the Republic of Azerbaijan on export control	26.10.2004
16.	Law of the Republic of Azerbaijan on Protection of Atmospheric Air	21.03.2001
17.	President Decree on the application of Law of the Republic of Azerbaijan on "Protection of Atmospheric Air"	11.06.2001
18.	Law of the Republic of Azerbaijan on 'Phyto-sanitary control"	21.05.2006
19.	President Decree on "Application of Law of the Republic of Azerbaijan on phyto-sanitary control"	06.02.2007
20.	State Program on "Alternative energy development in Azerbaijan"	Nov. 2004
21.	State Program on "Social-economic development of regions"	
22.	National Program on "Reforestration and Forestration in Azerbaijan"	2003
23.	Law on "Thermal and power stations"	28.12.1999
24.	State Program on "Development of fuel and energy complex of the Republic of Azerbaijan in 2005-2015 years"	14.02.2005
25.	Law on "Electric power"	13.06.1998
26.	Law on "Energy production"	01.02.1999
27.	Civil Code of the Republic of Azerbaijan	01.09.2000
28.	Law on "Environmental safety"	
29.	President order on "Ratification of the Complex Measures Plan on the improvement of ecological condition in the Republic of Azerbaijan for 2006-2010 years"	
30	Law on Access to Public Information, Public Participation in Decision Making and Access to Justice in Environmental Matters	1999
31.	Law on "Natural gas supply"	30.06.1998
32.	Decision of Tariff Council	07.01.2007
33.	Law on Protection of Historical and Cultural Sites	1998 (amendment 2005)
34.	Law on Sanitary and Epidemiological Safety	1993
35.	Law on Amelioration and Irrigation	1996
36.	Law on Protection of Flora	1996
37.	Law on Chemicals and Pesticides	1996
38.	Land Code	1996

SI. No.	Law / Regulation / Policy	Date of Adoption
39.	Water Code	1997
40.	Forestry Code	1997
41.	Law on Public Health	1997
42.	Law on Radiation Safety of Population	1997
43.	Law on Fauna	1999
44.	Law on Mandatory Environmental Insurance	2002
45.	Law on Access to Environmental Information	2002
46.	Law on Environmental Education	2002
47.	Decree 176, on Payments for the Use of Natural Resources and Environmental Contamination	1992

b. Policies

9. The Government's approach to environmental problems has a solid strategic anchor. The NEAP of 1997 analyses needed policy reform and prioritizes environmental problems into 32 objectives. Although the NEAP's objectives have not been reached, most of its directions remain valid, and an updating of the NEAP is being considered. The 2001 National Environmental Health Plan offers an approach to environmental management based on health considerations, rather than mainly ecological ones. The State Program on Poverty Reduction and Economic Development (SPPRED) 2003–2005, developed by the Ministry of Economic Development, acknowledges the many links between poverty and environmental conditions. It echoes the priorities of the NEAP and adds to them. The State Program on Environmentally Sustainable Socio-Economic Development 2003–2010, approved in 2003, was designed to address the principal dimensions of sustainable development and contained a time-bound plan of actions in 10 sub-sectors. The Program was partially implemented for the part of waste management and waste water treatment, and was renewed for another 6 years in 2010.

10. The National Biodiversity Strategy and Action Plan (2015-2020) prepared by the Ministry of Ecology and Natural Resources with involvement of number of other ministries and other governmental organizations clearly indicates the need for improvement of laws and legislations related to environmental safeguards.

c. International Agreements and Conventions[1]

11. The international agreements and conventions of relevance to the Project to which The Republic of Azerbaijan is party (or to which active discussions are taking place) are listed below. The Government has signed these international conventions in the environmental field.

- International Convention on Civil Liability for Oil Pollution Damage, 1969;
- Protocol of 1976 to the International Convention on Civil Liability for Oil Pollution Damage, 1976;
- International Convention for the Prevention of Pollution from Ships/ Vessels (MARPOL), 1973 as amended by the protocol, 1978 - The legislation giving effect to MARPOL 73/78 in Azerbaijan is the Protection of the Sea (Prevention of Pollution from Ships) Act 1983. Preventing and minimizing pollution of the marine environment from ships - both accidental pollution and that from routine operations, Azerbaijan acceded in 2004;
- Convention on Long-range Transboundary Air Pollution, 1979;
- Montreal Protocol on Substances that Deplete the Ozone Layer,1987 - Specific requirements for reductions in emissions of gases that deplete the ozone layer. Amended

[1] *Source: As per the Permanent Mission of the Republic of Azerbaijan to the United Nations, http://www.un.int/azerbaijan/mult_1.html*

four times: London 1990, Copenhagen 1992, Montreal 1997 and Beijing 1999.,Azerbaijan acceded in 1996;

- UN Convention on the Protection of the Ozone Layer (Vienna Convention) - Framework for directing international effort to protect the ozone layer, including legally binding requirements limiting the production and use of ozone depleting substances as defined in the Montreal Protocol to the Convention. Supported by the Montreal Protocol and amendments, 1996;
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989; Azerbaijan ratified in 2001.
- International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990; Azerbaijan acceded in 2004;
- Convention on Environmental Impact Assessments in a Transboundary Context, 1991;
- United Nations Framework Convention on Climate Change, 1992;
- Convention on Biological Diversity, 1992; Azerbaijan became party to the Convention in 2000;
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992;
- Convention on the Trans-boundary Effects of Industrial Accidents, 1992; Azerbaijan acceded in 2004;
- Protocol of 1992 to amend the International Convention on Civil Liability for Oil Pollution Damage, 1992;
- United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, 1994;
- Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, 1997;
- Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997; Azerbaijan acceded in 2000.
- Protocol of 1997 to amend the International Convention for Prevention of Pollution from Ships, as modified by the Protocol of 1978 relating thereto, 1997;
- Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki Convention), 1999; Azerbaijan acceded in 2002;
- Espoo Convention - To promote environmentally sound and sustainable development through the application of ESIA, especially as a preventive measure against transboundary environmental degradation, Azerbaijan acceded in 1999;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Entered into force in Azerbaijan in 1999;Convention for the Protection of the Archaeological Heritage of Europe, Azerbaijan ratified in 2000;
- Aarhus Convention - To guarantee the rights of access to information, public participation in decision-making and access to justice in environmental matters, Azerbaijan acceded in 2000;
- The Stockholm Convention on Persistent Organic Pollutants, Reduction in releases of dioxins, furans, hexachlorobenzene and PCBs with the aim of minimization or elimination. Stockholm, May 2001., Azerbaijan acceded in 2004.
- UNESCO Convention on Wetlands of International Importance especially as Waterfowl Habitat / RAMSAR Convention - Promote conservation of wetlands and waterfowl. In addition, certain wetlands are designated as Wetlands of International Importance and receive additional protection, 2001
- Bern Convention- Conservation of wild flora and fauna and their natural habitats,2002
- UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions, Azerbaijan acceded in 2010.

d. Environmental Assessment Process in Azerbaijan

12. An initial review of a proposed project is undertaken by the State Ecological Expertise (SEE) under MENR. The Law on Environmental Protection defines ecological expertise as “the

identification of conformity of the environmental conditions with qualitative standards and ecological requirements in order to identify, prevent and forecast the possible negative impacts of an economic activity on the environment and related consequences'. After initial review by the SEE, projects are categorized as high risk or low risk projects. For high risk projects full Environmental Impact Assessment (EIA) is required. The SEE examines the EIAs against such criteria as proper identification and addressing of impacts of the proposed project on soil, water, air, health impacts. However, for low risk projects the SEE does not require additional action. The WB guidelines will be adopted for subproject categorization under the project, with site specific environmental documentation to be further reviewed and cleared by local departments of MENR. A summary of EA process in Azerbaijan is given in Table 2 below:

Table 2: Summary of Guidance on the EA Process in Azerbaijan.

Screening	The developer is required to submit an Application (containing basic information on the proposal) to MENR to determine whether an EA is required.
Scoping	Requirement for a Scoping Meeting to be attended by the developer, experts and concerned members of the public, and aimed at reaching a consensus on the scope of the EA
Project Description	Full description of technological process and analysis of what is being proposed in terms of planning, pre-feasibility, construction and operation.
Environmental Studies	Requirement to describe fully the baseline environment at the site and elsewhere, if likely to be affected by the proposal. The environment must be described in terms of its various components – physical, ecological and social.
Consideration of Alternatives	No requirement to discuss Project alternatives and their potential impacts (including the so-called "do-nothing" alternative), except for the description of alternative technologies.
Impact Assessment and Mitigation	Requirement to identify all impacts (direct and indirect, onsite and offsite, acute and chronic, one-off and cumulative, transient and irreversible). Each impact must be evaluated according to its significance and severity and mitigation measures provided to avoid, reduce, or compensate for these impacts.
Public participation	Requirement to inform the affected public about the planned activities twice: when the application is submitted to the MENR for the preliminary assessment and during the EA process. The developer is expected to involve the affected public in discussions on the proposal.
Monitoring	The developer is responsible for continuous compliance with the conditions of the EA approval through a monitoring program.. The MENR undertakes inspections of the implementation of activities in order to verify the accuracy and reliability of the developer's monitoring data. The developer is responsible for notifying the MENR and taking necessary measures in case the monitoring reveals inconsistencies with the conditions of the EA approval.

13. Given that the proposed rehabilitation and enhancement project will have only minor potential impacts it is expected that MENR will not require a full EIA and therefore this ESMF, and site-specific EMPs to be prepare further, are e sufficient to obtain MENR approval.

2. The World Bank Environmental and Social Safeguard Requirements and Policies

The World Bank undertakes environmental and social screening of each proposed project to determine the appropriate extent and type of EA. The Environmental Assessment is defined through Operational Policy OP 4.01. The Bank classifies all proposed projects into one of

four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts. In accordance with the OP/BP 4.01, the proposed Project is expected to be classified as environmental category "B" , as the anticipated impacts are temporary, not irreversable and can be managed through the implementation of adequate mitigation measures.

a. World Bank OP 4.01

Environmental Assessment (EA) is the most widely applied of 10 environmental, social and legal safeguard policies of the WB. EA is used in the WB to identify, avoid and/or mitigate the potential negative environmental impacts associated with lending operations. The purpose of EA is to improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been adequately consulted. The WB's environmental assessment policy and recommended processing are described in Operational Policy (OP)/Bank Procedure (BP) 4.01: Environmental Assessment.

A brief summary is presented below:

- ✓ ***Environmental Screening*** is an important step through which proposed projects are assessed for the appropriate level and type of EA. In practice, the significance of impacts, and the selection of screening category, depends on the type and scale of the project, the location and sensitivity of environmental issues, and the nature and magnitude of the potential impacts.
- ✓ Projects are classified as ***Category A*** if they are 'likely to have significant adverse impacts that are sensitive, diverse, or unprecedented, or that affect an area broader than the sites or facilities subject to physical works.' Hence, the EA for a Category A project examines a project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the 'without project' situation), and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental performance. The EA of a Category A project considers both the social and the physical environmental impacts. Socioeconomic environment includes themes such as land acquisition and resettlement; indigenous or traditional populations, cultural heritage, aesthetics and landscapes, noise and human health and safety.
- ✓ The impacts of ***Category B*** projects are 'site-specific in nature and do not significantly affect human populations or alter environmentally important areas, including wetlands, native forests, grasslands, and other major natural habitats. Few if any of the impacts are irreversible, and in most cases mitigation measures can be designed more readily than for Category A projects.'
- ✓ For both the Category A and B projects, an Environmental Management Plan (EMP) needs to be established in accordance with the Bank's OP 4.01. EMPs as an essential feature of category A projects; and for category B projects, the EA may result in development of an EMP only, with no separate EA report. The specific requirements relating to EMPs are set out in Annex C to the WB's procedure 4.01 (BP 4.01).
- ✓ ***Category C*** projects are likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required.
- ✓ For Category A projects, the Borrower should consult with project affected groups at least twice: (i) shortly after screening and before the TOR for the EA are finalized, involving discussion on issues to be addressed in the EA; and (ii) once a draft EA is prepared, involving discussion of issues raised in the EA. In addition, the Borrower consults with such groups throughout project implementation as necessary to address

EA related issues that affect them.

b. World Bank OP 4.12

The WB OB/BP 4.12 on *Involuntary Resettlement* requires WB-assisted projects to avoid or minimize involuntary land taking. If such cannot be avoided, displaced persons need to be meaningfully consulted, compensated for lost/damaged assets and assisted in restoring or improving their living standards and livelihood. The policy requires that if involuntary land taking and resettlement become necessary, a clear plan for compensating and assisting displaced persons be prepared by the borrower by appraisal for WB review.
Such a plan must be substantially completed prior to the commencement of civil works.

c. Comparison of Azerbaijan Government Policy and WB Operational Policy 4.01 on Environmental Assessment

Overall, the proposed Project will be subject of national and WB environmental procedures including: (i) subproject screening and environmental classification; (ii) application of good practice environmental and social guidelines; (iii) implementation of required environmental work; and (iv) monitoring and supervision of subprojects.

The Azerbaijan EIA procedures are generally in line with the World Bank's EA process, as all projects require some sort of an environmental screening and possibly assessment in order to receive an Environmental Permission (for an activity having an impact on the environment, including some construction activities). Furthermore the type and scale of the impacts the project will have on the environment determine the procedures that have to be followed and the type of approval granted. Also all the approvals include conditions that shall be observed by the proposer including environmental monitoring and mitigation requirements.

The basic procedures for the conduct of EIA are laid down in the 1996 ***Handbook on the EIA Process in Azerbaijan.*** Although these provisions are not technically legally binding, compliance with them is to all intents and purposes regarded as mandatory

The EIA principles outlined by the Azerbaijan's legislation is in general consistent with international principles, calling for transparency, integration of environmental, social, engineering, economic and other assessments. In terms of timeframes, the EIA Handbook provides for one month for the Environmental Authority to make a decision on EIA scope, and for 12 months for the Developer to submit EIA after the Environmental Application is accpeted by the Environmental Authority, which advises on the required scope of the environmental assessment to be conducted. Not all EIA stages are adequately covered by the local legislation. A distinctive screening list with activities that are likely to cause significant environmental impact is not established either by the Law on EP nor by the EIA Handbook. Consideration of alternatives is not explicitly required by any of the two basic legal EA documents. However, in practice most of the developers, in an effort to meet requirements of international donors and achieve higher environmental performance do cover alternatives. On the other hand, the reporting requirements are specified in detail in the EIA Handbook. The World Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA. The Environmental Assessment is defined through Operational policies OP 4.01. The Bank classifies all proposed projects into one of four categories[6], depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

Monitoring and post-project analysis are among the weak aspects of Azerbaijani EIA system, covered only by rather vague requirements of the Law and Handbook for monitoring and audit of economic activities. This can partially be explained by the lack

of adequate mechanisms of monitoring and up-to-date system of internationally applied indicators. Therefore, the project environmental compliance shall be ensured by the implementation of this ESMF and site-specific EMPs, which the Azerishig/PMU will be responsible for.

EA process description: The sub-projects financed under the proposed Project will have to conform to current Azeri environmental laws and comply with international requirements and the regulations and the procedures of the WB's safeguard policies, including Environmental Assessment (EA) policy outlined in the Operational Policy 4.01 and the Involuntary Resettlement (OP 4.12). **Table 3** summarizes the approach to be completed by the Borrower (Azeirshig) to streamline the EA process applicable to the above investments, which meet both the Bank and the local environmental assessment requirements.

Table 3 Management of the EIA process for proposed rehabilitation of formal and informal dump sites sub-projects

Steps of EIA process	**Procedures to be followed by Azeishig based on the Azeri EIA legislation7 and on the WB OP 4.01**
Sub-Project Preparation Stage	
Screening and scoping of subprojects (approx. 1 month)	➢ •Azerishig submits an application (e.g., project brief) to MENR with copy to WB; ➢ • Decision on EIA to be conducted and notification of Azerishig on the scope and depth of the study by MENR
Sub-project EIA/EMP Preparation, Review and Disclosure Stage	
EIA/EMP report preparation and its dissemination	➢ • Prepare EIA or EMP based on the EMP checklist before commencement of works; ➢ • Submit draft EIA/EMP to WB for review and clearance before disclosure in country; ➢ • Submit EIA/EMP to MENR review for SEE; ➢ • Prepare final draft EIA/EMP including MENR, WB and public comments if any; ➢ • MENR issue the SEE (approval of the project); ➢ • Submit officially final EIA/EMP report to WB for "no objection"
Sub-project Implementation and Monitoring Stage	
Implementation of the EMP	➢ • Azerishig/PMU supervise works in accordance with EMP and submits progress reports to WB and MENR

The construction and rehabilitation works under the project will be subjected to a site-specific environmental screening and review process. This process will minimize site-specific environmental impacts and will use a standardized appraisal format. It is anticipated that this format will provide the key elements of an Environmental Management Plan (EMP) (**Annex 5**) to meet World Bank Environmental Assessment requirements under OP 4.01.

d. Comparison of Azerbaijan Government Policy and WB Operational Policy 4.12 on Involuntary Resettlement

Many requirements of the WB's OP 4.12 are covered in full or in part by current Azerbaijan legislation. These include: ¬ The requirement to pay compensation in advance where land is compulsorily acquired (Land Code, article 70.5) ¬ The need to compensate based on full market value or through grant of another land plot or building of equal quality, size, and value (Land Code articles 8 and 70.5) ¬ The need to avoid, wherever possible,

impacts on agricultural land and forests (Cabinet of Ministers Decree N42, section I, article 2 ¬ The requirement to compensate for losses, whether temporary or permanent, in production or damage to productive assets and crops (Cabinet of Ministers Decree N42, Sections I and II) ¬ Provision for pre-judicial avenues for resolution of disputes and rights of appeal etc. The OP 4.12 principle of avoidance or minimization or resettlement is addressed in Article 70.4 of the Land Code and article 3 of the Law on Acquisition of Lands for States Needs, which stipulate that lands can be withdrawn only for location of state, municipal, or public facilities of high importance. Under Article 22 of the Land Code, the state is required to establish protection zones with special (restrictive) regime for the purposes of construction and operation of industrial facilities.

There are, however, five broad areas where the borrower's obligation under OP 4.12 extends beyond those required under Azerbaijan legislation. These are as follows: - Land acquisition (and or resettlement), planning, and procedural requirements; - Public consultation and participation of project-affected communities; - Extent of compensation and types of assistance to be offered; - Categories of people eligible for compensation; - Income restoration. Resettlement Planning and Procedural Requirements.

Land Acquisition/Resettlement Planning

A Resettlement Policy Framework (RPF) has been prepared to address LAR issues if and when they occur in the course of planning and implementation of projects/subprojects financed under the Project. It establishes the principles and procedures for the compensation of possible loss of land, houses, buildings, crops, and livelihoods during the Project implementation in line with the World Bank Operational Policy 4.12 and relevant policies and guidelines on land acquisition of the Government of Azerbaijan (in case of conflict, the provisions of O.P. 4.12 will prevail). Subproject specific Resettlement Action Plans (RAP), if necessary, will be prepared in accordance with this RPF.

Measures that will be employed under the project to ensure compliance with OP4.12 will include:

- Participatory preparation of RPF, and site-specific RAPs, as needed.
- Involuntary resettlement, including land acquisition and all associated impacts, is to be avoided or at least minimized;
- Social screening will be carried out for each subproject to identify the need for an RAP if applicable;
- Compensation and/or other forms of rehabilitation assistance will be provided as necessary to provide those affected with opportunities to improve, or at least restore, their incomes and living standards;
- Compensation for land, structures or other assets will be paid based on the asset's replacement costs and without deductions for depreciation, titling, taxes, or for any other purpose, to the affected persons prior to clearance of right of way, ground levelling and demolition.;
- Affected persons should be fully informed and consulted on impacts and planned mitigation measures;
- Lack of legal title should not be a bar to compensation or alternative forms of assistance in lieu of compensation;
- Additional assistance will be provided to households headed by women and other vulnerable groups, and appropriate assistance should be provided to help them adapt to changed circumstances caused by the project;

- Full costs of compensation should be included in project costs.

Consultation and Participation

OP 4.12 specifies that PAPs should be informed about their options and rights pertaining to land acquisition and "…consulted on, offered choices and provided prompt and effective compensation at full replacement." (Clause 6 (i), (ii)). Currently there is no explicit consultation requirement in Azerbaijan legislation, but the provisions of OP 4.12 prevail..

Measures that will be employed under the project to ensure compliance with OP4.12 will include:

¬ Public consultations will be carried out as part of the RPF preparation in Baku and in two of the project's regions.

- For RAP preparation, a public consultation meeting that will be carried out after the completion of social screening in the relevant project area to inform the PAPs of the nature of the project, expected impact, entitlements for compensation, and measures for grievance redress;

¬ Disclosure of project environmental and social information as an integral part of the public consultation process, with information being provided about both benefits and disadvantages of the project;

¬ Information clearly presented in appropriate local languages and dialects and in modes that are sensitive to local communities;

¬ Information disclosed in locations that are open to the public and that are readily accessible to PAPs.

¬ Special measures to make sure that women are well represented in consultation and participation processes.

Compensation Eligibility

The categories of people who must be compensated under Azerbaijan legislation are narrower than those defined under OP 4.12. Under the legislation, the only individuals and entities entitled to compensation are those with registered property rights, for example, registered landowners, leaseholders, users and those with registered third-party rights, and those who have legally obtained the right to register their title but who have not completed registration. This potentially precludes many categories of affected people that would be entitled to compensation under WB Group policies. World Bank OP 4.12 by contrast embodies the principle that a lack of legal land title does not disqualify people from resettlement assistance.

Within the scope of this project, OP 4.12 prevails over Azerbaijan's legislation, and all attempts will be made to avoid investments on land, which is encumbered by non-legal owners. However should the case arise then non-formal users will be considered in RAP preparation and compensation first by attempting to legalize their property holdings, and anyway considering them as project affected peoples.

Compensation

The land acquisition and resettlement tasks under the project will be carried out according to the compensation eligibility and entitlement provisions developed in line with the Azeri laws and OP 4.12. Under the Project RPF the following categories of PAPs will be entitled to compensation and/or rehabilitation benefits:

(i) PAPs losing land irrespective of whether land is held under valid legal rights or customary rights with or without legal status;
(ii) Tenants and sharecroppers whether registered or not;
(iii) Owners of buildings, crops, trees or other objects attached to the land; and
(iv) PAPs losing business or income/employment opportunities.

PAPs and affected assets will be identified through a Detailed Measurement Survey (DMS). The DMS end date will be the cut-off date for compensation eligibility. PAPs settling in affected areas after this date will not be eligible for compensation. They, however, will be given sufficient advance notice to vacate and dismantle the affected land/structures. Their dismantled structures will not be confiscated nor will they be fined or sanctioned.

The compensation and rehabilitation entitlements for each affected item established for the Project is detailed below on **Table 4**.

Table 4: Entitlement Matrix

Loss	Impact	Displaced People	Entitlement
Permanent loss of agricultural land	All land losses regardless of severity of impact	Owner/ titleholder	• Land for land compensation with plots of equal value and productivity to the plots lost, and acceptable to the PAP; OR (based on PAP's preference) • Cash compensation at replacement cost based on market rate free of taxes, registration costs and transfer charges. Unaffected portions of a plot will also be compensated if they become unusable after acquisition of affected portion.
		Leaseholder (regardless if registered or not)	• Transfer of lease to other plots of equal value or productivity of plots lost; OR (based on PAP's preference) • Cash equivalent to the net income from the land calculated on the basis of the market value of annual production of affected land for the remaining lease years (up to maximum 10 years).
		Sharecroppers (regardless if registered or not)	• Cash compensation equal to market value of the lost harvest share (1 x for temporary impact and 2 x for permanent impact)
		Agricultural workers losing their job	• Cash compensation equivalent to their salary/wage in cash and kind for the remaining part of the agricultural year.
		Non-titled cultivators	• Rehabilitation allowance equal to 1 year's net income from the affected land (in addition to crop compensation) for land use loss.
	Severe/significant impact (loss of >10% of productive land)	Owner/titleholder	• Severe impact allowance equal to the net income from annual crop production (inclusive of winter and summer crop and addition to standing crop compensation) and the waiving of taxes and fees

Loss	Impact	Displaced People	Entitlement
		Sharecroppers (regardless if registered or not)	• Severe impact allowance equal to the net income from their annual share of harvest lost (additional to standard crop compensation)
		Non-titled cultivators and land users	• Severe impact allowance equal to the net annual income from the affected land (additional to standard crop compensation)
Temporary loss of land	Disturbances during construction or installation of distribution lines	All PAPs including non-titled users and squatters	• Affected land/communal infrastructure will be restored or reconstructed to pre-project conditions. • Rent shall be agreed between landowner and contractor equal to the revenue lost at market value (e.g. compensation for harvests lost at average yield/hectare).
Residential/ Commercial Land	All land losses regardless of severity of impact	Titleholder	• Land for land compensation with plots of equal value and productivity to the plots lost, and acceptable to the APs; or • Cash compensation for affected land at full replacement cost free of taxes, registration and transfer costs
		Non-titled users	• Provision of a free or leased plot in a Government resettlement area; or • Self-relocation allowance equal to 1 year at minimum salary.
Houses, buildings and structures	Full/partial loss of structures located within safety corridor	Owners (regardless if building registered or not or whether owns land or not)	• Cash compensation at replacement rate for affected structure/fixed assets without depreciation and transaction cost ▪ Free salvage of materials, depreciation and transaction costs. • For partial impacts, full cash assistance to restore remaining structure. • Cost of lost water and electricity connections will be included in the compensation
		Renter/Leaseholder	• An allowance equal to 3 month rent
Standing crops	Removal of crops from pole footprint/foundation area	All PAPs (including non-titled land users)	• Cash compensation equivalent to the gross income from the crop computed as the market value of the total annual produce from affected land. • To be paid both to landowners and tenants based on their specific sharecropping agreements.
Trees	Trees removed from safety corridor or pole footprint	All PAPs (including non-titled land users)	• Cash compensation shall reflect income replacement. • Fruit trees will be valued at market value of 1 year's produce X number of years needed to grow a tree of the same productivity.
Business/ employment	Temporary or permanent loss of business or	All PAPs (including non-titled land users)	• Business owner: (i) Cash compensation equal to 1 year's income, if loss is permanent; (ii) cash compensation for the

Loss	Impact	Displaced People	Entitlement
	employment		period of business interruption, if loss is temporary. Compensations based on tax declaration or official minimum salary • Worker/employees: Indemnity for lost wages for the period of business interruption up to a maximum period of 3 months.
Vulnerability Assistance	Any impact affecting vulnerable people	Vulnerable PAP (households below poverty line, and women headed families)	• 1 additional allowance equal to 3 months of minimum salary. • Priority for employment in project-related jobs, training opportunities, self-employment and wage-employment assistance
Relocation Assistance	Relocation (physical displacement)	All PAPs affected by relocation	Transport/ transitional livelihood costs: • Provision of cash compensation to cover transport expenses and livelihood expenses for one month. • If a person residing in place for at least 5 years, an extra compensation between 5-10% will be paid for loss of residential houses as per Article 66 of Expropriation Law, 2010. • The relocation sites should have public infrastructure facilities and utilities similar to original site from where a person is relocated.
Community assets or resources	Loss or damage to public infrastructure or natural resources	All PAPs	• Rehabilitation/replacement of affected structures/utilities (i.e. mosques, footbridges, roads, schools, health centres, grazing lands etc.)

e. Waste Management

The *Law on Industrial and Domestic Wastes* (1998) determines main principles of the state policy in solid waste management; obligations of the state authorities responsible for solid waste management, including allocation of plots for waste processing and disposal, coordination of waste recycling activities, setting rules for trans-boundary transportation of wastes, licensing of waste generating activities etc.; and also describes property rights. The Law specifies requirements for design, construction and reconstruction activities, for waste collection, transportation and disposal (prohibited within residential city areas and other residential settlements, in resorts, forest and recreational zones, in the areas where underground and potable water is available and in the zones of mining activities), for waste processing sites (shall be properly equipped with waste processing tanks, signage and control access points shall be available). The Law also encourages introduction of technologies for minimization of waste generation by industrial enterprises. The Law envisages both state and community (public) control over the waste generating activities and waste management, and imposes payments for collection, disposal, use and

processing of wastes. In addition, Azerbaijan is a party to several international conventions regulating the EIA process and waste management issues such as the Basel Convention on Hazardous Wastes Transportation.

The potential impacts related to this project will arise from the dismantling and demolition of substations' outdated equipment, infrastructure and facilities, and from reconstruction of substations and laying of underground cables. The impacts will be related to generation of wastes, incluidng hazardous, due to dismantling and demolition works, and to generation of dust, noise, solid waste, wastewater generation during construction activities, habitat loss for the footprint of the substations (for the underground cables this is not a major issue), etc. Occupational health and safety and managing traffic and pedestrian safety during construction phase is also an important issue. Impacts during the operational phase are mostly related to disposal of solid , hazardouse and SF6 gaz waste, and waste oil soils generating from the maintenance works of the substations, etc.

National legislation regulates the environmental aspects related to the implementation of project activities, as follows:

(i) Health and Safety

- All necessary protective equipments (hard hat, safety belt, protective clothes, gloves, glasses etc.) will be provided to the workers;
- Proper notification signs will be placed to maintain the security of the public and local people;
- The personnel will be trained on "labor health and occupational safety" issues. Information about the safety rules that must be obeyed within the work-site area during the construction works, risks and related regulations will be provided to all workers before the construction works start;
- Workers operating heavy machinery shall be properly licensed, and contractors shall possess respective insurance.

(ii) Excavation, solid and hazardous wastes due to construction

- Excavation wastes will be deposited by Contractor to the excavation waste disposal area licensed by the relevant municipality.
- Solid wastes (construction materials such as metal, conrete and wood) and packaging wastes (plastic, paper, glass etc.) will be systematically and separately collected and transported and either disposaed at a designtaed site, or recycled, by a a licensed firm provided by Contractor
- Organic domestic wastes, both solid and liquid, will be collected separately and disposed at a designated site by a licensed compnay or local communal services provided by Contractor. Waste waters will be collected in isloated septic tanks and collected and disposed by relevant local communal services which the Contractor shall involve on a regular basis.
- Hazardous wastes such as oil, dye etc. will be collected separately in leak proof, metal and labeled containers and handed over to a licensed company provided by Contractor. The final disposal of hazardous wastes shall be made at the hazardous Waste Landfll managed by MENR.

(iii) Substation oil

- Substation oil will be analyzed physically and chemically (density, acidity, viscosity, corrosive sulfide, flash point, PCB, color) by an independent laboratory to be provided by Contractor.
- Exhausted oil shall be replaced by collecting separately in leak proof, metal and labeled containers and handed over to a licensed company and its final disposal shall be carried out in accordance with the category to be determined by thesame company based on tests to be conducted by the independent laboratory.
- PCBs will never be used as replacement oils, and will be treated in accordance with respective UNEP guidelines referenced in footnote #3 below.

(iv) SF6 gas wastes

- SF6 gas will be monitored continously with presure measurement and gas leakages will be controlled. In the case of gas leakge (before SF6 gas density drops below the critic level), the respective unit will be kept out-of service until the problem is solved.

3. Institutional Capacity

14. The principal national environmental agency charged with environmental protection is the Ministry of Ecology and Natural Resources (MENR). This Ministry was established in 2001 to replace the former State Committee for the Environment, with an expanded mandate that includes geology, fisheries, and forests. MENR upholds all natural resources protection laws. The State Ecology Expertise (SEE) acts within this Ministry at the Program level in reviewing Environmental Impact Assessments (EIAs) of any developmental activities within the jurisdiction of Republic of Azerbaijan. Recently State Committee for Land and Cartography has been abolished and its functions were distributed among different governmental institutions. MENR also got part of the roles and responsibilities but those are still waiting for the final approval by Cabinet of Ministries.

15. The MENR has been responsible for managing the Hazardous Waste Landfill since its establishment in 2002. The staff of the Landfill has been trained under the World Bank supported Urgent Environmental Investments Project, and then has been continuously receiving capacity building assistance from major international customers of the Landfill services. These efforts resulted in formation of solid capacity for operating the Landfill, which remains the only in-country facility for disposal of hazardous waste meeting international standards. As to the capacity of the MENR to conduct SEE and ensure environmental monitoring, it requires further strengthening, and for the purposes of the project will be ensured through targeted consultancy assistance.

16. The major, even if indirect, role played in environment management by Government bodies other than MENR are the Ministry of Economic Development, Ministry of Agriculture (with its Committee for Land Improvement and Irrigation), Ministry of Fuel and Energy, Ministry of Health, Ministry of Education, Ministry of Interior, Ministry of Transport, Ministry of Justice and Ministry of Emergency Situations. Each of these agencies has a unit (a department, division, center, or section) charged with the environmental dimension of their activities, attesting to a deliberate attempt by the Government to undertake environmental mainstreaming.

17. At the Program level, as Executing Agency, Azerishig OJSC's organization structure does not include any group or person responsible for management of the environmental aspects associated with its operations. Azerishig OJSC is a newly created entity arising from a Presidential Decree unbundling the power sector. There is a need for significant technical support for Azerishig OJSC throughout implementation of the PROJECT to ensure that WB's environmental safeguards requirements and those of the GOA are fully complied with.

18. The Azerishig's Project Implementation Unit (PIU) will be strengthened with a dedicated staff member who is an environmental specialist with experience in preparing environmental assessments

and management plans, integrating environmental management plans into tender documents and monitoring and reporting on the implementation of environmental management plans. It is envisaged that the PIU environment specialist would be supported in their role by the project supervision and management consultant (PMC) who will have an environment specialist on the consultant team. A key activity of the project supervision and management consultant's environment specialist will involve assistance and cooperation with the PIU's environment specialist with a view to institutionalizing environmental safeguards within Azerishig's operations, through possible establishment of a dedicated environmental and social safeguards unit which will be responsible for Azerishig's environmental management in a sustainable and long term perspective. Implementation of environmental mitigation measures will be the responsibility of Azerishig.

C. ANTICIPATED ENVIRONMENTAL IMPACTS

19. As noted in Section A the distribution enhancement investment program involves the following physical activities (i) rehabilitation of 110 kV, 35 kV, 10 kV, and 6 kV distribution networks including distribution lines, substations and complete transformer substations (CTS); and (ii) rehabilitation of 0.4 kV customer service lines and installation of advanced electric meters.

20. Most potential negative impacts may occur during the construction phase of the project. In summary, the construction phase involves the following broad types of activities:

- Dismantling and disposal of old substation equipment, transformer and distribution line infrastructure including transformers, switchyard, poles/towers and lines
- Construction and installation of new substations, CTSs and distribution line infrastructure within existing substation sites and distribution line corridors
- Construction of some new 35 kV substations on green field sites on land owned by Azerishig. These will be connected to existing distribution line corridors nearby by either underground lines (in populated areas) or above ground poles in rural areas
- Installation of new 0.4 kV self-supporting insulated wire (SIW) customer service lines and installation of advanced electric meters.

21. The construction works for all project components will require minimal civil works.

22. Construction methods for substation rehabilitation will involve soil removal, platform preparation, foundations for transformers and installation of new transformers and switchgear within existing site boundaries. All the existing substations were built originally with a view for future expansion such that the land covered in the existing substation site can easily accommodate a new substation. There will be limited use of powered mechanical equipment other than cranes and trucks for equipment transportation. Much of the work will involve manual erection of equipment.

23. Construction methods for distribution line rehabilitation will involve removal of existing lines and poles/towers along the existing rights of way, auguring of holes for new pole/tower foundations, erection of new poles/towers using cranes and manual labor and stringing of conductors using pulleys with mobile winches. Where underground lines are proposed in urban areas this will involve the use of a small mechanical excavator to dig a narrow trench 1m deep and <0.5m wide, laying of gravel base, laying of cable within a protective sheath, covering with gravel and emplacement of concrete above.

24. Construction of CTS will involve replacing existing 10kV or 6kV transformers as well as some additional new transformers. CTSs comprise an enclosed transformer (2.5x2.5x1.5m) placed on a concrete slab approximately (4m x4m) and surrounded by an iron safety fence. Construction works are primarily manual including the occasional use of a mobile crane and largely hand held mechanical equipment.

1. Design and Location Impacts

25. In all project areas, that were visited during the preparation of this ESMF, the project components do not encroach upon ecologically sensitive areas. They are generally located and traverse through barren land with minimum vegetative cover and agricultural areas. Further detailed analyses will be conducted in the framework of site-specific EMPs, when draft detailed designs are available for the project sites. Such analyses will consider, inter alia, impacts on migratory pathwats and/or frequently used flyways for birds and bats. Maximum emphasis has been given to use existing distribution line corridors as well as existing locations for substations. Most project components will be constructed and operated within existing substation sites and distribution line rights of way. For the occasional new substation site and distribution lines, site selection has been done based on the analysis of Azerishig's existing network and the following principles:

(i) Utilize Azerishig's existing land assets
(ii) Minimize disturbance of human settlements;
(iii) Avoid monuments of cultural or historical importance;
(iv) Do not create a threat to the survival of any local communities;;
(v) Do not affect any public utility services like playgrounds, schools etc.;
(vi) Do not pass through any protected areas, including their established buffer (sanitary) zones (see Attachment 2 for list of protected areas).
(vii) Avoid disturbance to migratory birds and bats;
(viii) Minimize damage to existing forest resources, and
(ix) Selection of new equipment, i.e. transformers, capacitors, etc., will comply with international standards particularly with respect to avoiding use of PCBs.

Each site-specific EMP shall be preceded by brief site description and assessment for each case, confirming that there are no environmental sensitivities related to each location. Cost estimates for the implementation of environmental mitigation and monitoring plan shall be determined for each project site.

26. The selection of new equipment, i.e. transformers, capacitors, etc., will comply with international standards particularly with respect to avoiding use of PCBs.

2. Construction Impacts

27. Minor disruption to farming activities and disturbance of crops, bunds, canals and drains could occur during construction and maintenance activities. To minimize such impacts, established roads, tracks and maintenance access ways will be used wherever possible, compensation will be paid for temporary loss in agricultural production in accordance with the provisions made in land acquisition resettlement framework.

28. Topsoil will be protected and reinstated after construction is completed, and damaged bunds and irrigation facilities will be maintained in working condition throughout project implementation. Temporary access roads may be needed in some locations. The environmental impacts associated with the establishment of temporary access roads will include compaction of soil structure and disruption of stream or other water bodies. To minimize the impact the contractors will be required to limit the load of trucks in transporting construction equipment and materials. Further mitigation measures will be detailed under site-specific EMPs.

29. Uncontrolled soil erosion and silt run-off are likely to be minor due to the limited amount of excavation required for poles / substation foundations and dry climate. In addition, measures to minimize erosion and silt run-off will be incorporated into contract documents.

30. Substations will be sited and designed to ensure noise levels from the fence will not exceed 55 dB(A) at daytime and 45 dB(A) at night time. Noise generated by construction activities will be of short duration in predominantly rural locations, and is considered insignificant. Other nuisances from

construction activities will be mitigated through contract clauses specifying careful construction practices and compensation paid for any losses in agricultural production.

31. Escape of polluting material such as oil and sewage from construction camps (if required) and substations will be prevented through design and installation of appropriate oil containment and sewerage systems. Hazardous waste generated from phased out equipment namely old transformers, as well as existing contaminations on the site (e.g. oil contaminated soil) and asbestos will be disposed of as per existing norms of the Ministry of Ecology and Natural Resources (MENR) which are bound by international obligations under the Stockholm Convention on Persistent Organic Pollutants to which Azerbaijan is a signatory.

32. Health hazards from potential explosions/ fire, electric shocks, accidents to staff and the general public will be minimized through implementation of measures such as:

(i) Careful designs using appropriate technologies to minimize hazards;
(ii) Safety awareness raising for construction and operational staff and general public;
(iii) Substations equipped with modern fire control systems;
(iv) Provision of adequate water supply and sanitation facilities for substations and construction camps;
(v) Provision of adequate staff training in operations and maintenance; and
(vi) Security fences and barriers around substations and towers in populated areas.

3. Operational Impacts

33. Minimum land width will be maintained under distribution lines as maintenance rights-of-way (RoWs). If privately owned, this land will be acquired from its owners, according to the provisions of the project's RPF, and site-specific RAPs will be prepared as needed. All formal and informal land users will be compensated, as specified in the RPF and in accordance with site-specific RAPs. Trimming ("lopping") of trees (if required) will be carried out with the assistance of the local forest department to ensure that the required vertical clearances from the top of tree to the conductor are maintained throughout the line corridors. This will reduce the chances of forest fires due to electric sparks.

34. It is unlikely that Sulphur hexafluoride gas (SF_6)[2] gas will be used as an insulating agent for electrical switching equipment, cables and transformers since it is normally only used in applications involving high voltages (>350kV). In the case that equipment containing SF_6 is used, equipment with a low leakage rate (<99%) will be used.

35. To minimize the risk of accidents and exposure to electric fields, houses will not be allowed within RoWs. Farming and other agricultural activities will be allowed under certain restrictions, to be determined during the detailed design stage. General awareness among people about potential risks due to high-voltage and low voltage lines and safety aspects should be raised.

36. Table 1 summarizes the anticipated impacts during construction and operations. Overall, the Project will have minimal negative impacts that can be cost-effectively mitigated.

Table 1: Project Impacts and Mitigation Measures

Types of Impacts	Impact Sources	Treatment Measures
Noise: Construction Period	Construction equipment and equipment repairing and maintenance	Equipment to meet local noise standards; construction scheduling to avoid evening and nighttime disruption
Noise: Operational Period	Distribution lines and associated substations	Locate facility 70 m to 100 m away from nearest receptor; walls, fencing, and/or greenbelt to provide

[2] SF_6 is one of the six greenhouse gases covered by the Kyoto Protocol, but Azerbaijan is not subject to Kyoto emissions caps and SF_6 is not regulated by Government of Azerbaijan as a pollutant

Types of Impacts	Impact Sources	Treatment Measures
		partial sound barrier
Wastewater: Construction Period	Domestic wastewater	Primary treatment by camps (if required)
	Industrial wastewater from construction equipment maintenance	Sedimentation and biological treatment
	Waste oil from phased out transformers and other equipment	Decommissioning transport, storage and disposal of old transformers will be undertaken in accordance with national and international best practice and supervised by the MENR as required under Azerbaijan's obligations as a signatory to the Stockholm Convention on Persistent Organic Pollutants.[3]
Wastewater: Operational Period	Domestic wastewater, to be generated due to the presence of sub-station service and operation teams	Primary treatment
	Industrial wastewater and oils from transformer replacement	Off-site disposal at licensed treatment facility and as above for old transformers.
Air Quality: Construction Period	Dust during construction and exhaust gases from construction machinery and vehicles	Continuous management measures to be imposed at the construction sites
Air Quality: Operational Period	Release of gases in receptors from process, equipment	Replace equipment / process / system using CFCs including halon and dispose of in manner consistent with the requirements of the Government
Solid Wastes: Construction Period	Spoils from earth moving; construction debris	Spoils to be used as base material for substations
	Replaced equipment	Dispose of in a manner consistent with the requirements of the Government and in the case of old transformers see above.
Solid Wastes: Operational Period	Garbage from substations and storage yards	Disposed at facilities approved by local government pollution control agencies
Hazardous waste	Phased out equipment, contaminations on the site and asbestos	Hazardous waste generated from phased out equipment namely old transformers, as well as existing contaminations on the site (e.g. oil contaminated soil) and asbestos will be disposed of as per existing norms of the Ministry of Ecology and Natural Resources (MENR). The PCBs from old transformers and capacitors will be managed in accordance with UNEP guidelines referenced to in footnote #3 below.
Electricity distribution lines: disturbance to migratory pathways and frequently used flyways of birds and bats	Installation and operation of electricity distribution lines	Analyses of migratory pathways and frequent flyways to be conducted during the details design stage. Electricity distribution lines and other sub-station facilities and infrastructure to be located so that to avoid any potential disturbance

[3] Old transformers may contain PCB oils and therefore will require careful handling storage and disposal in accordance with internationally recognised best practice as per UNEP "PCB Transformers and Capacitors: From Management to Reclassification and Disposal" (2002) available at http://www.chem.unep.ch/pops/pdf/PCBtranscap.pdf.

BOD = biochemical oxygen demand, COD = chemical oxygen demand, dB(A) = decibel acoustic, NO_2 = nitrogen dioxide, NO_x = nitrogen oxides, PCB = polychlorinated biphenyl, SO_2 = sulfur dioxide, TSP = total suspended particles, CFC – Chlorofluorocarbons, GHG – Green House Gases.

D. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS AND/OR COMPONENTS

37. The ESMF outlines the policies, procedures, and institutional requirements for preparing subsequent subprojects. The Executing Agency (EA), Azerishig, is responsible for preparing the required environmental assessments and obtaining WB concurrence prior to implementation. These approvals must be in place prior to finalization of contracts and commencement of work.

38. The following general criteria will be adopted for selection of the projects included in the PROJECT:

(i) Subprojects will not be located in protected areas, including their established buffer (sanitary) zones (see Attachment 2 for list of protected areas).
(ii) Monuments of cultural or historical importance will be avoided. Care should be taken in working around such area with additional specific mitigation measures.
(iii) An environmental management plan (EMP) with adequate budget will be developed for each subproject. Such site specific EMP will also contain site assessment which will specifically consider any environmental and social sensitivities which might exist in the project area.
(iv) Potential environmental impacts will be minimized by routing and siting to avoid sensitive areas. Re-alignment or selection of alternative sites may be required.
(v) Clearing of any existing forest resources will be avoided to the extent possible, and, where unavoidable, will be minimized and compensated as per GoA regulatory criteria.
(vi) New equipment / facilities specifications shall follow international standards and best practices to avoid use of chemicals causing greenhouse gas (GHG) emissions.
(vii) All equipment procured under the investment program shall be free from polychlorinated biphenyl (PCBs).

1. Environmental Screening and Classification Requirements

39. For each sub-project, the process of environmental screening and categorisation shall be undertaken, and the level of required study is determined. The significance of project's environmental impacts and risks determines the environmental categorization of the project.

40. During the selection of subprojects, WB OP 4.04 “Natural Habitats” will be used for the first level of screening. OP 4.04 Project Design and Implementation specifies:

> “3. The Bank promotes and supports natural habitat conservation and improved land use by financing projects designed to integrate into national and regional development the conservation of natural habitats and the maintenance of ecological functions. Furthermore, the Bank promotes the rehabilitation of degraded natural habitats.
>
> 4. The Bank does not support projects that, in the Bank's opinion, involve the significant conversion or degradation[3] of critical natural habitats.
>
> 5. Wherever feasible, Bank-financed projects are sited on lands already converted (excluding any lands that in the Bank's opinion were converted in anticipation of the project). The Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs. If the environmental assessment indicates that a project would

significantly convert or degrade natural habitats, the project includes mitigation measures acceptable to the Bank. Such mitigation measures include, as appropriate, minimizing habitat loss (e.g., strategic habitat retention and post-development restoration) and establishing and maintaining an ecologically similar protected area. The Bank accepts other forms of mitigation measures only when they are technically justified.

6. In deciding whether to support a project with potential adverse impacts on a natural habitat, the Bank takes into account the borrower's ability to implement the appropriate conservation and mitigation measures. If there are potential institutional capacity problems, the project includes components that develop the capacity of national and local institutions for effective environmental planning and management. The mitigation measures specified for the project may be used to enhance the practical field capacity of national and local institutions."

41. Projects which trigger any of the above conditions in OP 4.04 will require approval from WB who will advise whether the project may proceed. If it will proceed it will undertake a rigorous environmental categorization to ensure proper environmental classification and the level of environmental assessment needed according to WB Safeguard Policies.

42. All subprojects to be included in PROJECT will be screened to determine its environmental category based on the Rapid Environmental Assessment (REA) Checklist as per the template provided in Attachment 1 below. Categorization is to be based on the most environmental sensitive component, which means that if one part of the project is with potential for significant adverse environmental impacts, then the project is to be classified as Category A regardless of potential environmental impacts of other aspects of the project. In general, a project will be classified as 'Category A' if the project:

(i) requires a complex mitigation measure needing to be prepared through an in depth assessment of the impacts and detailed study for preparing mitigation measures;
(ii) will generate impact on an ecologically sensitive area, particularly if the project is located in buffer or core zone of any designated specially protected areas, or area of international significance or cultural heritage and archaeological sites designated by UNESCO.

43. All subprojects will be categorised and based on their category relevant environmental assessment procedure will be followed. Environmental assessment is a generic term used to describe a process of environmental analysis and planning to address the environmental impacts and risks associated with a project.

44. Depending on the significance of project impacts and risks, the assessment may comprise a full scale EIA, and/or an EMP or equivalent process for Category B projects.

2. Environmental Assessment and Environmental Management Plan Requirements

45. At an early stage of the preparation of each project, Azerishig will categorize the project as B or C and carry out the necessary Environmental Assessment. The EMP/EIA will identify potential direct, indirect, cumulative and induced environmental impacts on and risks to physical, biological, socioeconomic, and physical cultural resources and determine their significance and scope, in consultation with stakeholders, including affected people and concerned NGOs. For Category B projects with potentially significant adverse impacts that are diverse, irreversible, or unprecedented, where EA will be required in addition to EMP, Azerishig will examine alternatives to the project's location, design, technology, and components that would avoid, and, if avoidance is not possible, minimize adverse environmental impacts and risks. The rationale for selecting the particular project location, design, technology, and components will be properly documented, including, cost-benefit

analysis, taking environmental costs and benefits of the various alternatives considered into account. The "no action" alternative will be also considered.

46. Impacts and risks will be analysed in the context of the each project area that encompasses:

(i) the primary project site(s) and related facilities;
(ii) associated facilities that are not funded as part of the Program, and whose viability and existence depend exclusively on the project and whose goods or services are essential for successful operation of the project;
(iii) areas and communities potentially affected by cumulative impacts of the Program, and other sources of similar impacts in the geographical area; and
(iv) areas and communities potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location.

47. Environmental impacts and risks will also be analysed for all relevant stages of the project cycle, including preconstruction, construction, operation, decommissioning, and post-closure activities such as rehabilitation or restoration.

48. Azerishig will prepare an EMP that addresses the potential impacts and risks identified by EIA. The EMP will include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training requirements, implementation schedule, cost estimates, and performance indicators.

49. The environmental assessment and presentation of the EMP is to consists of different sections as shown in Attachment 3.

50. Azerishig should ensure that WB be given access to undertake environmental due diligence for all projects under the PROJECT. However, Azerishig has the main responsibility for undertaking environmental due diligence and monitoring the implementation of environmental mitigation measures for all projects. The due diligence report as well as monitoring reports on implementation of the EMP needs to be documented systematically.

51. Environmental monitoring will consist of routine systematic checking that the above environmental management measures have been implemented effectively during each stage of the project. Table 2 presents the summary monitoring plan for projects to be funded by the PROJECT.

Table 2: Summary Environmental Monitoring Plan

Environmental Monitoring Tasks[4]	**Implementation Responsibility**	**Implementation Schedule**
Pre Construction Phase		
Review project bidding documents to ensure EMP is included.	PIU Environmental Specialist, PMC	Prior to issue of bidding documents.
Monitor contractor's detailed alignment survey to ensure relevant environmental mitigation measures in EMP have been included.	PIU Environmental Specialist, PMC	Prior to EA approval of contractor's detailed alignment survey.
Review detailed designs of Facilities to ensure standard environmental safeguards/mitigation measures (as identified in EMP) have been included.	PIU Environmental Specialist, PMC	Prior to EA approval of contractor's detailed designs.

[4] Monitoring of issues related to compensation of landowners for loss of production, etc., are addressed in the Land Acquisition and Resettlement Framework.

Environmental Monitoring Tasks[4]	Implementation Responsibility	Implementation Schedule
Construction Phase		
Regular monitoring and reporting of contractor's compliance with contractual environmental mitigation measures.	PIU Environmental Specialist, PMC	Continuous throughout construction period.
Operation and Maintenance Phase		
Observations during routine maintenance inspections of facilities and distribution lines RoWs. Inspections will include monitoring implementation status of mitigation measures specified in EMP.	PIU/Azerishig	As per EAs inspection schedules

Social monitoring will be carried out by a social safeguards consultant hired by the PIU. The consultant will work closely with the PIU and the constructors, and social monitoring reports will be regularly submitted to the World Bank.

E. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCES REDRESS MECHANISM

52. EMPs and EIAs prepared for additional sub projects will be translated into local language(s) and made available to the public.

1. Public Consultation

53. For any project subject to the ESMF and where an EA and/or EMP are required, formal and documented public consultation and information disclosure will be required in accordance with the WB and government's consultation and information disclosure requirements. This will be done at an early stage during EMP preparation and is to inform stakeholders of the project components and to encourage input to identify possibly overlooked environmental issues. The information disclosed and feedback provided at the consultation sessions will be summarized, attendance recorded, and the document attached as an annex to the EMP.

54. For each of the projects (or groups of projects where applicable) Azerishig will organize consultations with project affected people and other stakeholders. Consultation will be based on the following principles:

(i) Early start in the project preparation stage and continuation throughout the project cycle;
(ii) Timely disclosure of relevant information in a comprehensible and readily accessible to affected people format;
(iii) Ensuring the absence of intimidation or coercion during public consultation;
(iv) Gender inclusive and responsive with focus on disadvantaged and vulnerable groups, and
(v) Enabling the integration of all relevant views of affected people and stakeholders into decision-making.

55. Invited attendees at EMP consultations will include government agencies and district authorities, community representatives, as well as NGOs. At least two week notice of consultation meetings will be given.

2. Information Disclosure

Azerishig is responsible for ensuring that all environmental assessment documentation, including the environmental due diligence and monitoring reports, are properly and systematically kept as part of a Azerishig project specific record. All environmental documents are subject to public disclosure, and therefore be made available to public. For Category A projects, the draft EIAs will be disclosed to the public through WB's website 120 days prior to WB Board consideration, or approval of the PFR for subsequent tranches. The EIA has to be reviewed by WB before it is disclosed to the public.For Category B projects the EMP has to be disclosed on WB's website upon receipt. Azerishig will ensure that meaningful public consultations, particularly with project affected persons, are undertaken during the EMP/EIA preparation process for the future projects.

3. Grievance Redress Mechanism

56. In order to receive and facilitate the resolution of affected peoples' concerns, complaints, and grievances about the project's environmental performance an Environmental Grievance Redress Mechanism will be established for each of the projects. When and where the need arises, the mechanism will be used for addressing any complaints that arise during the implementation of projects. The grievance mechanism should be scaled to the risks and adverse impacts of the project. It should address affected people's concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no costs and without retribution. The mechanism should not impede access to the Azerbaijan's judicial or administrative remedies. Azerishig will appropriately inform the affected people about the mechanism.

4. Grievance Focal Points, Complaints Reporting, Recording and Monitoring

57. The process for solving environmental complaints that may arise in the project is the Grievance Redress Mechanism, which will have to be established at each district (rayon) in which the various project components will be implemented. The process is described below:

58. Environment complaints will be received through the Grievance Focal Point (GFP), these will be designated personnel from within the community who will be responsible for receiving the Environmental complaints. The Contractor will record the complaint in the onsite Environmental Complaints Register (ECR) in the presence of the GFP.

59. The GFP will discuss the complaint with the Contractor and have it resolved;

60. If the Contractor does not resolve the complaint within one week, then the GFP will bring the complaint to the attention of the project supervision and management consultant PMC. The PMC's Environment Specialist will then be responsible for coordinating with the Contractor in solving the issue.

61. If the Complaint is not resolved within 2 weeks the GFP will present the complaint to the Grievance Redress Committee (GRC). The GRC will be comprised of designated officials from the following organizations: Contractor's Environment Specialist, PMC' Environment Specialist, GFP, District Level representative, DE Environment Specialist and a representative from Azerishig"s PIU.

62. The GRC will have to resolve the complaint within a period of 2 weeks and the resolved complaint will have to be communicated back to the community. The Contractor will then record the complaint as resolved and closed in the Environmental Complaints Register.

63. In parallel to the ECR placed with the Contractor, each GFP will maintain a record of the complaints received and will follow up on their rapid resolution.

64. Azerishig will also keep track of the status of all complaints through the Monthly Environmental Monitoring Report submitted by the Contractor to the PMC, and will ensure that they are resolved in a timely manner. Figure 1 shows that Grievance Redress Mechanism.

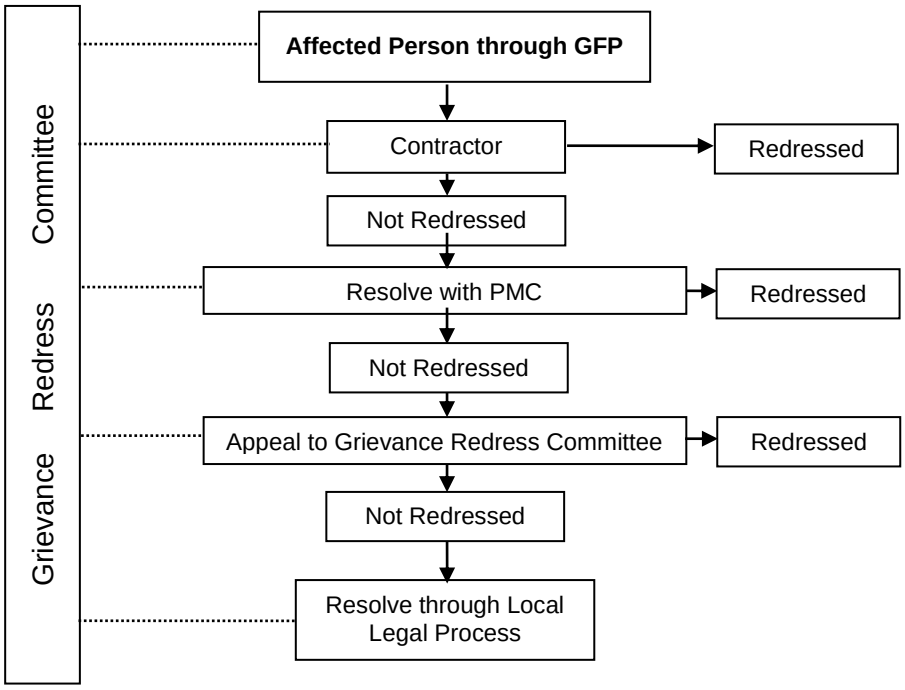

Figure 1: Grievance Redress Mechanism

F. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

65. The main institutions that will be involved in environmental management activities are Azerishig the program executing agency (EA), Azerishig OJSC, project management and supervision consultant (PMC), contractors, and line agencies including Ministry of Ecology and Natural Resources.

66. Azerishig has overall responsibility for all aspects of the Program. The Project Implementation Unit (PIU) established within Azerishig will be responsible for the day to day management of the technical aspects of the Program. It is proposed that an environmental specialist will be appointed to the PIU by Azerishig who will be responsible for management of the environmental aspects associated with development of electricity distribution projects financed under the PROJECT.

67. Responsibility of environmental management and compliance with SPS 2009 requirements lies with the Azerishig PIU.

68. Azerishig PIU will ensure the environmental management and monitoring budgets are available and utilized as necessary for timely EMP implementation.

69. Each contractor will be required to have one person designated as environmental officer / coordinator working in the field. This environmental officer will be responsible for day to day implementation of the EMP.

70. The detailed responsibilities of each agency are listed here.

1. Azerishig Responsibilities

(i) Prepare environmental screening (REA) checklist and assign a category to all new projects in consultation with MENR and other departments.
(ii) Based on the environmental classification of projects, prepare terms of reference to conduct EMP or EIA studies.

(iii) Hire a full time environmental specialist who will, inter alia, prepare EMP or EIA reports which will include an EMP for public disclosure according to WB OP 4.01
(iv) Ensure that an EMP or EIA are prepared in compliance with the requirements of the Government and WB, and that adequate consultation with affected people is undertaken in accordance with WB requirements and recorded in the EMP/EIA
(v) Undertake review of the EMP or EIA, and EMP reports to ensure their compliance with the requirements of the Government and WB.
(vi) Obtain necessary permits and/or clearance, as required, from MENR and other relevant government agencies, ensuring that all necessary regulatory clearances are obtained before commencing any civil work on the relevant sections.
(vii) Submit to WB the EMP or EIA, and EMP reports and other documents, as necessary.
(viii) Ensure that any EMP including relevant mitigation measures needing to be incorporated during the construction stage by the contractor are included in the bidding documents.
(ix) Ensure that contractors have access to the EIA / EMP and EMP reports of the projects.
(x) Ensure that the EMP is made part of the Contractor's bidding documents.
(xi) Ensure that contractors understand their responsibilities to mitigate environmental problems associated with their construction activities and train their staff in implementation of the EMP.
(xii) Ensure and monitor that an EMP including an environmental monitoring plan will be properly implemented.
(xiii) Ensure that the contractor submits regular environmental monitoring reports to the PMC as part of routine progress reporting.
(xiv) Ensure that the PMC reviews and submits six monthly Environmental monitoring reports to the PIU.
(xv) Submit semi-annual environmental monitoring report to WB.
(xvi) In case unpredicted environmental impacts occur during the project implementation stage, prepare and implement as necessary an environmental emergency program in consultation with MENR, any other relevant government agencies, and WB.

2. WB Role

(i) As part of regular project supervision, the World Bank will undertake periodic monitoring of the EMP implementation and due diligence. and guide Azerishig as neceswary in managing environmental aspects of the project implementation.

G. MONITORING AND REPORTING

71. Throughout implementation of the PROJECT, the Government and WB will monitor the implementation progress and impact of projects. Overall, the EMP for each project will be implemented by contractors under supervision of the PIU/PMC within Azerishig. In consultation with Azerishig and WB, the PIU will establish a system for preparing six monthly reports on environmental performance monitoring, issues resolution, and corrective action plans.

72. Progress on the preparation and implementation of EMPs will be included in the periodic project progress reports. Specific monitoring activities defined in the EMPs or EIAs and EMPs will be carried out by the contractors and supervised by the PMC's Environment Specialist and monitored by the PIU's Environment Specialist. Azerishig will submit six monthly Environmental Monitoring Reports on EMPs implementation for WB's review.

73. In general, the overall extent of monitoring activities, including their scope and periodicity, should be commensurate with the project's risks and impacts. Azerishig is required to implement safeguard measures and relevant safeguard plans, as provided in the legal agreements. At a minimum, WB will require Azerishig to:

(i) establish and maintain procedures to monitor the progress of implementation of EMPs;

(ii) verify the compliance with environmental measures and their progress toward intended outcomes;
(iii) document monitoring results and identify necessary corrective and preventive actions in the periodic monitoring reports;
(iv) follow up on these actions to ensure progress toward the desired outcomes;
(v) submit six-monthly environmental monitoring reports on compliance with the EMPs.

74. WB will carry out the following monitoring actions to supervise project implementation:

(i) conduct periodic site visits for projects with adverse environmental or social impacts;
(ii) conduct supervision missions with detailed review by WB's safeguard specialists/officers or consultants for projects with significant adverse social or environmental impacts;
(iii) review semi-annual monitoring reports submitted by Azerishig to ensure that adverse impacts and risks are mitigated as planned and as agreed with WB;
(iv) work with Azerishig to rectify to the extent possible any failures to comply with their safeguard commitments, as covenanted in the legal agreements, and exercise remedies to re-establish compliance as appropriate.

75. The PIU, with assistance of the PMC, will review the EMP or EIA and corresponding EMP for each project to ensure that mitigation measures and monitoring plans proposed in that document are in compliance with WB's and national requirements. For this purpose, the PIU will provide WB with access to information on any projects. The information on implementation of an EMP, as well as that on environmental and social safeguard compliance, will be systematically documented and reported to WB as part of the regular progress reports.

76. Monitoring plans will be prepared for each project and will be part of each EMP.

(i) The Environmental Specialist in Azerishig PIU will be responsible for supervision of implementation of each sub-project EMP;
(ii) The PIU Environmental Specialist will prepare a semi-annual Environmental Monitoring Report on the project EMP implementation and submit it to WB. The report will outline where work has not complied with the EMP and what steps have been taken to rectify it, format of the Monitoring Report is attached as Attachment 4.
(iii) After one year the Environmental Specialist will arrange to review the monitoring program and make any adjustments to it as required. The Environmental Specialist will inform the WB and Azerishig of any changes that are recommended to be made prior to implementing the changes.

ATTACHMENT 1: REA CHECK LIST

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to World Bank for review and approval

(ii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:	
Sector Division:	

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to protected areas (including their buffer zones) listed in Attachment 2?			
B. Potential Environmental Impacts Will the Project cause…			
▪ encroachment on historical/cultural areas, disfiguration of landscape and increased waste generation?			
▪ encroachment on precious ecosystem (e.g. sensitive or protected areas)?			
▪ alteration of surface water hydrology of waterways crossed by roads and resulting in increased sediment in streams affected by increased soil erosion at the construction site?			
▪ damage to sensitive coastal/marine habitats by construction of submarine cables?			
▪ deterioration of surface water quality due to silt runoff, sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased local air pollution due to rock crushing, cutting and filling?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ chemical pollution resulting from chemical clearing of vegetation for construction site?			
▪ noise and vibration due to blasting and other civil works?			
▪ economic dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			

Screening Questions	Yes	No	Remarks
▪ social conflicts relating to inconveniences in living conditions where construction interferes with pre-existing roads?			
▪ hazardous driving conditions where construction interferes with pre-existing roads?			
▪ creation of temporary breeding habitats for vectors of disease such as mosquitoes and rodents?			
▪			
▪ environmental disturbances associated with the maintenance of lines (e.g. routine control of vegetative height under the lines)?			
▪ disturbances (e.g. noise and chemical pollutants) if herbicides are used to control vegetative height?			
▪			
▪			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations?			
▪ risks to community safety associated with maintenance of lines and related facilities?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project (e.g., high voltage wires, and transmission towers and lines) are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

A Checklist for Preliminary Climate Risk Screening

Country/Project Title:

Sector :

Subsector:

Division/Department:

Screening Questions		**Score**	**Remarks**[5]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?		
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?		
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High):_____

Other Comments:_____
_____

Prepared by: _____

[5] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

ATTACHMENT 2: LIST AND MAP OF PROTECTED AREAS OF AZERBAIJAN

List of the Specially Protected Nature Areas of the Republic of Azerbaijan

National Parks

№	Name of the SPNA	Administrative territory	Area (size in ha)	Date of establishment
1	Zangazur NP named fter Academician H.Aliyev	Nakhichevan AR	42797,4	2003
2	Shirvan NP	Garadagh district of Baku city, Salyan and Neftchala regions	54373,5	2003
3	Aghgol NP	Aghjabadi and Beylagan regions	17924	2003
4	Hirkan NP	Lankaran and Astara regions	40358	2004
5	Altiaghaj NP	Khizi and Siyazan regions	11035	2004
6	Absheron NP	Azizbayov district of Baku city	783	2005
7	Shahdagh NP	Guba, Gusar, Ismayilly, Gabala, Oghuz and Shamakhy regions	130508,1	2006
8	Goygol NP	Goygol, Dashkasan and Goranboy regions	12755	2008
9	Samur- Yalama NP	Khachmaz, Khudat, Yalama regions	11772,5	2012

State Nature Reserves

№	Name of the SPNA	Administrative territory	Area (size in ha)	Date of establishment
1	Gizilaghaj SNR	Lankaran region	88 360	1929
2	Zagatala SNR	Zagatala and Balakan regions	47 349	1929
3	Turyanchay SNR	Aghdash, Oghuz,Yevlakh and Gabala regions	22 488	1958
4	Shirvan SNR	Salyan and Neftchala regions	6232	1969
5	Basitchay SNR	Zangilan region	107	1974
6	Garayazi SNR	Gazakh region	9658	1978
7	Ilisu SNR	Gakh region	17381,6	1987
8	Garagol SNR	Lachin region	240	1987
9	Eldar shami SNR	Samukh region	1686	2004
10	Mud volcanoes SNR	Baku and Absheron peninsula	20 000	2007
11	Korchay SNR	Goranboy region	4833,6	2008

State Nature Sanctuaries

№	Name of the SPNA	Administrative territory	Area (size in ha)	Date of establishment
1	Lachin SNS	Lachin region	20 000	1961
2	Korchay SNS	Goygol and Goranboy regions	15 000	1961
3	Bandovan SNS	Salyan region and Garadagh district	4930	1961
4	Shaki SNS	Shaki region	10 350	1964
5	Gusar SNS	Gusar region	15 000	1964
6	Shamkir SNS	Shamkir region	10 000	1964
7	Gil island SNS	Gil island	400	1964
8	Garayazy-Aghstafa SNS	Aghstafa region	10 000	1964

9	Barda SNS	Barda and Aghdam regions	7500	1966
10	Zuvand SNS	Lerik,Yardimly regions	15 000	1969
11	Ordubad SNS	Ordubad region	27 869	1969
12	Ismayilli SNS	Ismayilly and Gabala region	23 438	1969
13	Qubadlı SNS	Qubadlı, Lachin region	20 000	1969
14	Lesser Gizilaghaj SNS	Lankaran region	10 700	1978
15	Dashaltı SNS	Shusha region	450	1981
16	Qizilja SNS	Gedebey region	5135	1984
17	Arazboyu SNS	Zangilan region	2200	1993
18	Gabala SNS	Gabala region	39 700	1993
19	Gakh SNS	Gakh region	36 836	2003
20	Hirkan SNS	Lankaran and Astara regions	1553	2005
21	Arazboyu SNS	Nakhichevan AR	9118	2005
22	Zagatala SNS	Zagatala and Balakan regions	6557	2008
23	Arpachay SNS	Nakhichevan AR , Sharur region	68 911	2009
24	Rvarud SNS	Lerik region	510	2009

Source: Ministry of Ecology and Natural Resources of Azerbaijan Republic (http://www.eco.gov.az/en/b-xm-tb.php)

ATTACHMENT 3: FORMAT AND CONTENT OF EMP

This outline is part of the Safeguard Requirements 1. An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical EIA report contains the following major elements, and an EMP may have a narrower scope depending on the nature of the project. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown.

A. Executive Summary

This section describes concisely the critical facts, significant findings, and recommended actions.

B. Policy, Legal, and Administrative Framework

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

C. Description of the Project

This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

D. Description of the Environment (Baseline Data)

This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

E. Anticipated Environmental Impacts and Mitigation Measures

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

F. Analysis of Alternatives

This section examines alternatives to the proposed project site, technology, design, and operation—including the no project alternative—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

G. Information Disclosure, Consultation, and Participation

This section:

(i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;

(ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and

(iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

H. Grievance Redress Mechanism

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

I. Environmental Management Plan

This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

(i) Mitigation:

(a) identifies and summarizes anticipated significant adverse environmental impacts and risks;

(b) describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and

(c) provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.

(ii) Monitoring:

(a) describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and

(b) describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

(iii) Implementation arrangements:

(a) specifies the implementation schedule showing phasing and coordination with overall project implementation;

(b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and

(c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

(iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

J. Conclusion and Recommendation

This section provides the conclusions drawn from the assessment and provides recommendations.

ATTACHMENT 4: FORMAT OF BI-ANNUAL ENVIRONMENTAL MONITORING REPORT

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Part I Introduction

- Construction activities and Project Progress during previous 6 months
- Changes in project organization and Environmental management team
- Relationships with Contractors, owner, lender, etc.

Part II Environmental Monitoring

- Environmental monitoring summary – summarise the previous six months monitoring data and provide explanations of any instances where environmental standards or guidelines are exceeded. Typically this will cover:
  - Noise and Vibration
  - Water Quality
  - Air Quality
  - Flora and fauna monitoring

- Recommendations are required to show how any exceedences will be prevented in the future.
- Graphs can be used in this section to show trends, however large tables of data or multiple graphs should be attached as an appendix.`

Part III Environmental Management

- EMS, SSEMP and work plans. Report on delivery of documents, required amendments etc.
- Site Inspections and audits – summarise the number and type of site visits
- Non-compliance notices – summarise the details on the number of notices given out and the issues covered. Summarise the ranking of issues.
- Corrective action plans - report on timeliness of preparation and completion
- Consultation and complaints – report on any consultation undertaken and list any complaints received.

Annexes

- Monitoring data
- Photographs
- Implementation report on EIA/EMP mitigation requirements

Reference	Requirement	Action to date	Action required/comment

ATTACHMENT 5 : ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The objective of the EMP is to ensure the integration of the possible project environmental issues and proposed mitigation into the detail design and project implementation. To achieve satisfactory implementation of the Project, the EMP should ensure that: (i) implementation is monitored and meets the requirements of the environmental law in Azerbaijan and the WB safeguard policies; and (ii) environmental impacts are mitigated The borrower (Azerishig) and the selected EA Consultant will (a) identify the set of mitigation actions to potentially adverse environmental impacts; (b) determine requirements for ensuring that these mitigations are made effectively and in a timely manner; and (c) propose activities to monitor mitigation actions.

The following content is developed based on WB OP 4.01 Annex C, and adapted to the proposed Project. It is suggested that the following information be included:

(a) **Mitigation Plan**: This includes a description of the steps to be taken to identify all anticipated significant effects, to mitigate the major potential impacts on land, water, air and other media during the cleanup works. Potential impacts during the costruction works are expected such as solid oily waste, noise, pollution caused by spills and leakages, waste water. Special attention should be paid for proper collection of asbestos structures/materials abandoned at the sites and collection of substation oils.
(b) **Monitoring Plan**: Project monitoring plan includes conducting standard monitoring on environment (soil pollution, solid waste, noise) as well as continuous monitoring in emergency situations. This includes a description of the key parameters to be monitored (including monitoring locations, schedules and responsible entities) and reporting procedures to ensure that the construction and operation of the project is in conformance with local law and other relevant norms and standards. If such details are covered by permits or construction or monitoring contracts these can be referenced as attachments. Special attention should be given to general monitoring in oil polluted areas of former oil and gas production sites through regular soil, water and radio-ecological measurements.
(c) **Institutional Arrangements**: There should be a narrative discussion that provide a brief presentation on how the monitoring data is going to be used for sound environmental performance - who collects the data, who analyzes it, who prepares reports, who are the reports sent to and how often, what is done by the responsible authorities after they receive the information; and how is non-compliance with the EMP managed. This should also include (a) technical assistance programs (training), (b) procurement of equipment and supplies, and (c) organizational changes.
(d) **Implementation Schedule and Cost Estimates:** For all three aspects (mitigation, monitoring, and capacity development), the EMP should provide (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) cost estimates for each site-specific EMP, andsources of funds for implementing the EMP. These figures are also integrated into the
total project cost tables.

1.	**MITIGATION TABLE**	

2.	Subject	Mitigation Measures**	Cost	Responsible Institution*	Start Date	Finish Date
3.	Cultural and Historical Assets	• Archaeological findings at construction sites within the project framework are not anticipated, In case of coinciding with any cultural asset, the construction will be stopped immediately and the Archaeological department will be informed. • Until the response is taken, any action will not be done at the site. • After taking the positive response (no cultural assets) the construction will continue.	No additional cost	Contractor	Start of Construction Works	Completion of construction works
	Dismantling of the existing substation (valid for substations)	• All redundant equipment and waste will be collected separately and whenever possible, these materials will be recycled by a licensed firm. • Asbestos containing materials will be disposed of by the firms licensed for hazardous waste disposal	Included in the construction contract	Contractor	Start of the dismantling works	Completion of the dismantling works
	Dust – Particulate Matter	• The regulated limit value of Dust/Particulate matter emission being according to SNIP is not to be exceeded. • Watering will be done in the dry seasons • Loading and unloading will be carried out with care and without scattering. In order not to lead to scattering, loading/unloading works will be performed in an area allocated for loading/unloading and water sprays will be used in loading/unloading area. Moreover, the workers are warned being careful about loading/unloading activities. Windy weathers will not be selected for loading/unloading if it is applicable. • The trucks will be covered with canvas, etc. and speed limitation will be applied. Speed limit on trucks is 30 km/hr (at project site) and 50 km/hr (outer of the project site – within the city) • Only vehicles with emission stickers will be used • Tires of the trucks will be cleaned where necessary to prevent dirt being carried onto the roads	Included in the construction contract	Contractor	Start of the excavation work	Completion of the excavation works

CONSTRUCTION	Noise	• All construction works will be done between 8am and 5pm. If it is required to work after 5 pm, local authorities and public will be informed about these working hours. • People, living at the population centers around, will be informed about the working durations • The continuous work-site noise (day times) will be ensured to be according to SNIP. To satisfy this; • The construction machines (vehicles) inspection, maintenance and oiling will be done in time and periodically, and the items resulting in noise will be replaced.	No additional cost	Contractor	Start of Construction Works	Completion of construction works
	Wastewater	• Wastewaters due to work-site will be given to the sewerage system of the Province by the connection to the sewerage system.	Included in the construction contract	Contractor	Start of Construction Works	Completion of construction works
	Excavation, solid and hazardous wastes due to construction	• Excavation wastes will be deposited to the excavation waste disposal area licensed by the relevant municipality. • Solid wastes (construction materials such as metal, wood) and packaging wastes (plastic, paper, glass etc.) will be systematically and separately collected and it will be ensured to be taken by Municipality or a licensed recycle firm. • Organic domestic wastes due to worker/personnel will be collected separately and it will be ensured to be taken by Relevant Municipality and disposed to Solid Waste Disposal Area locating near Village. • Hazardous wastes such as oil, dye etc. will be collected separately in leak proof, metal and labeled containers and it will be ensured to be taken by a licensed firm ensured by the Contractor	Not high (changing by depending on municipalities and/or licensed recovery plant)	Contractor	Start of Construction Works	Completion of construction works
	Wastes due to vehicle parking	• Maintenance of the vehicles will not be done at the project site unless there is an emergency situation • Waste oil due to construction machines and vehicles will be collected in rustless barrels and will be sent to a licensed firm by the contractor. • The barrels will be placed onto an impermeable ground to protect them from rain and sun and all necessary precautions against fire will be taken. The area where the barrels are placed will be surrounded with the warning sign. Firefighting set (bucket, axe, shovel, pickaxe, and anchor) will be at that area. • Batteries, tires and similar items due to construction machines and vehicles will be sent to a licensed firm for final disposal.	Not High	Contractor	Start of Construction Works	Completion of construction works

CONSTRUCTION	Health and Safety	• All necessary protective equipments (hard hat, safety belt, protective clothes, gloves, glasses etc.) will be provided to the workers • Proper notification signs will be placed to maintain the security of the public and local people • The personnel will be trained on "labor health and occupational safety" issues. Information about the safety rules that must be obeyed within the work-site area during the construction works, risks and related regulations will be provided to all workers before the construction works start.	Within project budget	Contractor	Start of Construction Works	Completion of construction works
	Landscape	• The work-site will be restored. • No hazardous, solid, liquid, construction wastes will be left at the site.	Within project budget	Contractor	Completion of construction works	Taking the substation into operation
CONSTRUCTION	Habitats (flora/fauna)	• All recognized natural habitats, wetlands and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. • A survey and an inventory shall be made of large trees in the vicinity of the construction activity, large trees shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided • Adjacent wetlands and streams shall be protected from construction site run-off with appropriate erosion and sediment control feature to include by not limited to hay bales and silt fences • There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas. • Electricity distribution lines will be designed and constructed so that to avoid any disturbance to migratory pathways and frequent flyways of birds and bats	Within project budget	Contractor	Start of construction works	Taking the substation into operation

CONSTRUCTION	Traffic and Pedestrian Safety	In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to: • Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards • Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. • Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement • Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. • Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public.	Within project budget	Contractor	Start of construction works	Taking the substation into operation
OPERATION	Noise	• The limit values of noise according to SNIP will not be exceeded. to satisfy these limits; • Equipments forming the substation shall be specified in the bid documents and supplied in accordance with the International Electrotechnical Comission (IEC) 60076-10 and other international standards (For 154 kV transformers≤60 dBA at source/For 380 kV transformers≤70 dBA at source).	Within the operation budget	PIU Transmission Network Operation Maintenance Department	Taking the substation into operation	Completion of the economic life of the substation

OPERATION	Electro-Magnetic Field (EMF)	• The limit values (5 kV/m for electric field/for public, 1000 mG for magnetic field (24 hours/day); 10 kV for electric field/for labors, 5000 mG for magnetic field (8 hours/day)) mentioned in International Commission on Non-Ionizing Radiation Protection (ICNIRP) will be complied with. In order to satisfy this limits the following will be conducted; • As specified in the bid documents, all the equipments of the substation (transformer, disconnector, circuit breaker, surge-arrester, current transformer, voltage transformer etc.) will be taken according to the International Electrotechnical Commission (IEC) and other international standards and the controls and maintainance (strengthening by renewal) will be done in accordance with IEC. • The substation will be surrounded by the wall and fence. Therefore, enterance, approach, and settlement would be avoided. • The substation building, equipments, wall and fence will be grounded. In any case of sign of a failure (such as failure in the operation of an equipment, increasing the contact current, electrical arc, local warming etc.) the grounding resistance will be measured and according to the measurment results the grounding of the ones having the problem will be strengthened by local rehabilitation, maintaning the continuity of the connections etc.	Within the operation budget	PIU	Taking the substation into operation	Completion of the economic life of the substation

4.	Health and Safety	• The personnell will be selected from the people having trained in first aid, electric safety, working at high levels for the maintanace of the substation • The warning signs and climbing barriers will be placed around the substation.	Not high (as a part of operation budget)	PIU PIU District Office	Taking the substation into operation	After the completion of the economic life of the substation
	SF6	• SF6 gas will be monitored continously with presure measurement and gas leakages will be controlled. In the case of gas leakge (before SF6 gas density drops below the critic level), the bay will be shut down (closed) and that part will be out-of service until the problem is solved.	Not high (as a part of operation budget)	PIU 999999999 Network Operation Maintenance Department	Taking the substation into operation	After the completion of the economic life of the substation
	Fire Risk	• The substation which will be established as to the fire safety elements according to the regulations of Ministry of Emergency shall be controlled regularly and all equipment shall be controlled, maintained, tested, rehabilitated and renewed (in terms of the parameters like bushing, SF6, isolation oil, cable ends and gas leakage). • All eqipments will be tested according to the national and international standarts againts arc and sparks.	Not high (as a part of operation budget)	PIU PIU District Office Transmission Network Operation Maintenance Department	Taking the substation into operation	After the completion of the economic life of the substation
	Substation oil	• Substation oil will be analyzed physically and chemically (density, acidity, viscosity, corrosive sulfide, flash point, PCB, color). • When the oil completes its economic life, it will be replaced with new one and disposal of it will be ensured by conducting required tests (to determine the category of the oil) and applying proper disposal method as to the category test results • PCBs will never be used as replacement oils.	Not high (as a part of operation budget)	PIU PIU District Office Transmission Network Operation Maintenance Department	Taking the substation into operation	After the completion of the economic life of the substation
	Solid-Liquid and Hazardous Wastes	• Solid wastes, junk materials and construction wastes will be collected seperately and they will be ensured to be taken by the Relevant Municipality or a licenced firm • Wastes such as oil, dye will be collected in separate, impermeable, metal and labeled conteyners and will be ensured to be taken by a licenced recycle firm	Not High (changing by depending on municipalities and/or licensed recovery plant)	PIU PIU District Office	Taking the substation into operation	After the completion of the economic life of the substation
	Social	• The project will establish citizens feedback mechansim to adress grievencess durign the operation and any other proejct related grievency.				

* Valid in the case of handing over of the proposed works to subcontractors. Otherwise, responsibilities defined for contractor will belong to PIU

** While taking the proposed measures, compliance with all related regulations (Air Quality Evaluation and Control Regulation, Water Pollution Control Regulation, Environmental Noise Evaluation and Control Regulation, Solid Waste Control Regulation, Soil Pollution Control Excavation, Construction and Demolition Wastes Control Regulation, Hazardous Waste Control Regulation, Package and Packaging Waste Control Regulation,

H.	**MONITORING TABLE**									
I. **PHASE**	**Subject**	**What are the parameters, which would be monitored?**	**Where the parameters would be monitored?**	**How would the parameters be monitored?**	**When would the parameters be monitored - frequency of the measurements?**	**Why would the parameters be monitored?**	**Cost**	**The Institute that controls – frequency of the control**	**Start Date**	**Finish Date**
Construction	Cultural and Historical Assets	Cultural assets at the site	Construction site	Visual	In case of coinciding a cultural asset continuously by an archeologist	Obeying the Cultural and Natural Assets Protection Law	Not high if no cultural assets are damaged	Provincial Culture and Museum Directorate	START OF THE CUNSTRUCTION WORKS	COMPLETION OF CONSTRUCTION WORKS
	Dismantling of the existing substation (valid for substation)	Substation components & installation Redundant equipment and wastes	Construction site	Visual	During the dismantling activity	Related Environmental Laws and Regulations	No additional cost (within the project budget)	PIU PIU District Office	START OF THE DEMOLISHING ACTIVITIES	COMPLETION OF THE DEMOLISHMENT ACTIVITIES
	Dust – Particulate Matter	Dust Formation due to the Movement and Exhaust of the Construction Machinery (mg/Nm^3) Complaints from public	Construction site	Visual inspection Interviews with the local people near the site	During the excavation period / intense construction works, weekly/ in the case of complaint	Industrial Air Pollution Control Regulation	No additional cost (within the project budget)	PIU PIU District Office	START OF CONSTRUCTION WORKS	COMPLETION OF CONSTRUCTION WORKS

Grounding in Power Installations Regulation, Work Health and Safety Regulation, Health and Safety Conditions on Usage of Work

Construction	Noise	Complaints from public Noise Level (dBA)	Construction site	Interviews to be conducted in near residential areas Noise level measurement with noise meter (sound level meter)	Observation (weekly) In the case of complaint from public	Environmental Noise Evaluation and Control Regulation	Not High	PIU PIU District Office	START OF THE CONSTRUCTION WORKS	COMPLETION OF CONSTRUCTION WORKS
Construction	Wastewater	Connection to the sewerage system, Contamination in the water and/or soil in the substation area	Connection to the sewerage system Substation area	Visual (Wastewater generated by the workers will be given to the sewer system of the city. The connection to the sewer system and whether any wastewater is discharged to soil, water or to any receiving body expect the permitted one will be observed and controlled)	Weekly (irregular controls)	In accordance with the Water Pollution Control Regulation and Soil Pollution Control Regulation	No additional cost (within the project budget)	PIU PIU District Office Municipality	START OF THE CONSTRUCTION WORKS	COMPLETION OF CONSTRUCTION WORKS

J. PHASE	Subject	What are the parameters, which would be monitored?	Where the parameters would be monitored?	How would the parameters be monitored?	When would the parameters be monitored - frequency of the measurements?	Why would the parameters be monitored?	Cost	The Institute that controls – frequency of the control	Start Date	Finish Date
Construction	Excavation, Solid and Hazardous Wastes	Storage and disposal conditions	Construction site and disposal site	Visual	Weekly (irregular controls)	Compliance with Conservation of Habitat Regulation, Solid Waste Control Regulation and Soil Pollution Control Regulation, Hazardous Wastes Control and Waste Oil Control Regulation	No additional cost	PIU PIU District Office Contractor Municipality	START OF THE CONSTRUCTION WORKS	COMPLETION OF CONSTRUCTION WORKS
	Wastes due to Vehicle Parking	Waste oils, automobile batteries, used tires and junk electronic materials	At the vehicle parking area	Visual Inspection and control of vehicle maintenance documents	During the failure and regular maintenance	Achievement of the disposal of the wastes compliance with Waste Oil Control Regulation, Waste Battery and Accumulators Control Regulation, End-of-tires Control Regulation	No additional cost	Contractor	START OF THE CUNSTRUCTION WORKS	COMPLETION OF CONSTRUCTION WORKS
	Health and Safety	Documents related to workers health and safety training Equipment used by the worker during working for construction (hard hat, gloves, safety belt etc.) Work practices	Construction sites	Visual	Beginning of the each work stage Daily	In accordance with Labor Health and Occupational Safety Regulation	No additional cost (within the project budget)	PIU PIU District Office	START OF THE CONSTRUCTION WORKS	COMPLETION OF CONSTRUCTION WORKS

J. PHASE	Subject	What are the parameters, which would be monitored?	Where the parameters would be monitored?	How would the parameters be monitored?	When would the parameters be monitored - frequency of the measurements?	Why would the parameters be monitored?	Cost	The Institute that controls – frequency of the control	Start Date	Finish Date
Construction	Landscape	Wastes (construction, solid, hazardous, liquid) are left at the site, the excavated areas	The project area	Visual	During closing the construction site	Compliance with Environmental Law and Regulations	No additional cost (within the project budget)	PIU PIU District Office	Start of the construction works	Completion of construction works
	Habitats	Any adverse impact on flora and fauna at the project area	The project area	Visual	Continuous	Compliance with Environmental Law and Regulations and ESMP	No additional cost (within the project budget)	PIU PIU District Office	Start of the construction works	Completion of construction works
	Traffic and pedestrian safety	Installation of signs, speed of vehicles, etc.	The project area	Visual	Continuous	Compliance with Environmental Law and Regulations and ESMP	No additional cost (within the project budget)	PIU PIU District Office	Start of the construction works	Completion of construction works
	Social Land acq. Grievance	The process will be guided through RPF								
Operation	Noise	Noise level (dBA) Public complaint	At the border (wall) of the substation Near residential areas	Interviews with the local people	In the case of complaint	Control of the limit values determined in the related regulation	Not High	PIU PIU District Office	Taking the substation into operation	Completion of the economic life of the substation
	Electromagnetic Field Strengths	Distance between the substation and the wall/fence Documents related to the equipment procurement Grounding resistance (ohm)	Within the substation and substation area	Visual observation Interviews with the people at the near residential areas Grounding measurement	Taking the substation into the operation Any problem, failure in the grounding	Control of satisfying the national and international referance values	Not High	PIU PIU District Office	Taking the substation into operation	Completion of the economic life of the substation

J. PHASE	Subject	What are the parameters, which would be monitored?	Where the parameters would be monitored?	How would the parameters be monitored?	When would the parameters be monitored - frequency of the measurements?	Why would the parameters be monitored?	Cost	The Institute that controls – frequency of the control	Start Date	Finish Date
Operation	Health and Safety	Technical training in terms of operation and maintenance Protective equipment and clothes (whether usage or not)	The substation area	Visual	Maintenance works (proper periods)	Compliance with related health and safety regulations	No additional cost (within the operation budget)	PIU PIU District Office	Taking the substation into operation	Completion of the economic life of the substation
Operation	SF6	SF6 gas pressure	All bays	With pressure meter	During the operation (continuously)	Compliance with the Environmental Law and Regulations Innecessaty of operation	No additional cost (within the operation budget)	PIU PIU District Office	Taking the substation into operation	Completion of the economic life of the substation
Operation	Fire Risk	SF6 gas pressure cable ends isolators cable connection points Primary and secondary controllers	Substation area	Technical tests and standard maintenance tests performed by the controllers	Semi-annually / in the case of maintenance, control and failure	Due to fire risk To comply Electric Intense Current Plants Regulation requirements related to fire safety, to repair the worn, broken parts, to minimize the risk of accident and to prevent the outage	No additional cost (within the operation budget)	PIU PIU District Office	Taking the substation into operation	Completion of the economic life of the substation
Operation	Substation Oil	Oil characteristic parameters (density, acidity, viscosity, corrosive sulfide, flash point, PCB, color)	Transformers	Physical, chemical analyses done by PIU Test Laboratories	Bi yearly/daily, weekly, monthly in the case of failure	Quality control of the substation oil	Not high (within operation budget)	PIU PIU District Office	Taking the substation into operation	Completion of the economic life of the substation

J. PHASE	Subject	What are the parameters, which would be monitored?	Where the parameters would be monitored?	How would the parameters be monitored?	When would the parameters be monitored - frequency of the measurements?	Why would the parameters be monitored?	Cost	The Institute that controls – frequency of the control	Start Date	Finish Date
Operation	Solid-Liquid and Hazardous Wastes (automobile accumulator, substation oil)	Contamination within the area of substation (wastes, smell etc.) Defective equipment wastes Contaminants in the waste substation oil (Arsenic, Cadmium, Lead, Total Halogens, PCBs, Flashing point)	Substation area	Visual Analyses	During the operation period In the case of defection, failure, completion of the economic life of the equipment Completion of the economic life of the substation oil	Compliance with Conservation of Habitat Regulation, Solid Waste Control Regulation and Soil Pollution Control Regulation, Hazardous Waste Control Regulation Compliance with Waste Oil Control Regulation	Not high (changing by depending on municipalities and/or licensed recovery plant) Not high (depending on the firm/laboratory conducting the analysis)	PIU PIU District Office Municipality Provincial Directorate of Environment and Forestry	Taking the substation into operation	Completion of the economic life of the substation