

# Social Compliance Audit Report

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## Bangladesh: Muktagacha Solar Power Project

Prepared by EQMS Consulting Limited for the Asian Development Bank (ADB).

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# **SOCIAL COMPLIANCE AUDIT OF MUKTAGACHA SOLARTECH ENERGY LIMITED AT MUKTAGACHA, MYMENSINGH**



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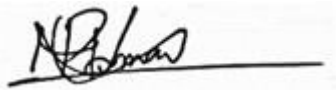
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18 September 2024

# SOCIAL COMPLIANCE AUDIT OF MUKTAGACHA SOLARTECH ENERGY LIMITED AT MUKTAGACHA, MYMENSINGH

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## ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
BOO	Build-Own-Operate
AC	Alternating Current
BPDB	Bangladesh Power Development Board
CNG	Compressed Natural Gas
DC	Direct Current
IESE	Initial Environmental and Social Examination
CSOs	Civil Society Organizations
CAP	Corrective Action Plan
SCA	Social Compliance Audit
IP	Indigenous Peoples
GRM	Grievance Redress Mechanism
JPL	Joules Power Limited
MW	Megawatt
PV	Photovoltaic
SPS	Safeguard Policy Statement
ST	Scheduled Tribes
IPP	Indigenous Peoples Plan
BDT	Bangladeshi Taka
DG	Director General
DOE	Department of Environment
ECAs	Ecologically Critical Areas
ECC	Environmental Clearance Certificate
ECR	Environment Conservation Rules
EMP	Environmental Management Plan
ESMP	Environmental and Social Management Plan
FGD	Focus Group Discussion
GBV	Gender-Based Violence
GIS	Geographic Information System
GPS	Global Positioning System
IFC	International Finance Corporation
MSEL	Muktagacha Solartech Energy Limited
NOC	No Objection Certificate
PPE	Personnel Protective Equipment
PS	Performance Standard

ROW	Right of Way
TOR	Terms of References
WEEE	Waste Electrical and Electronic Equipment

## **EXECUTIVE SUMMARY**

## EXECUTIVE SUMMARY

Muktagacha Solartech Energy Limited (MSEL) proposes to advance and function a 20 MW AC Solar Photovoltaics Power Plant Project on 68 acres of land. MSEL, acting as the project sponsor, is seeking project financing from the Asian Development Bank (ADB) for the development, construction, and operation of the Muktagacha Solar Power Project (the Project). The project entails establishing a Grid Tied Solar Power Project as an independent power producer (IPP). It will supply contracted electricity to the Bangladesh Power Development Board (BPDB) on a Build-Own-Operate (BOO) basis for a duration of 22 years. The plant will be located in Nimoria, Muktagacha, Mymensingh, Bangladesh

The objectives of the social compliance audit are to identify the Project area of influence, including associated facilities, where environmental, social, health and safety impacts/risks could potentially occur and assess the ability to manage and address all relevant social risks and impacts of its business operations, in particular, the issues identified in safeguards requirements (ADB SPS 2009) and applicable national laws and regulations.

The social compliance audit report is prepared in accordance with the applicable local and national environmental and social laws and regulations of Bangladesh, ADB Safeguard Policy Statement (SPS), 2009, ADB Social Protection Strategy, 2001, ADB Gender and Development Policy, 1998, IFC Performance Standards on Environmental and Social Sustainability Framework, 2012, World Bank Group/IFC EHS guidelines as well as applicable sector-specific Guidelines and other relevant good industry practice guidelines, international standards/accreditation, and related documents.

The Audit was conducted using a combination of methods including the use of checklists, observations, site surveys, photography, interviews with the management, staff, workers, and affected persons, and literature reviews of documented information.

A physical site assessment was conducted from 28 April 2024 to 04 May 2024 to understand the site condition, working environment, identify potentially unsafe areas, health and safety practices, reporting systems, emergency response systems, and physical inspection of the project and its utilities. and a visit to the corporate office on 21 May 2024. The site visit covered the MSEL site and other associated facilities such as access road, transmission line route etc.

The Social experts of EQMS Consulting Limited conducted the site visit to the Project location from 28 April 2024 to 04 May 2024 and a visit to the corporate office on 21 May 2024

A total of 16 Corrective Action Plans (CAP) have been made according to their significance, responsibility, and timelines for completion of actions.

# 1 INTRODUCTION

## 1.1 Project Background

Muktagacha Solartech Energy Limited, acting as the project borrower, is seeking project financing from the Asian Development Bank (ADB) for the development, construction, and operation of the Muktagacha Solar Power Project. The project entails establishing a 20MW Grid Tied Solar Power Plant along with approximately 8 km overhead transmission line as an independent power producer. It will supply contracted electricity to the Bangladesh Power Development Board on a Build-Own-Operate (BOO) basis for a duration of 22 years. The plant will be located in Muktagacha, Mymensingh, Bangladesh.

## 1.2 Nature and Objectives of the Study

The objective of the social compliance audit includes:

- review of existing baseline socio-economic profile of the communities in the Project area – if available, collection of sex-disaggregated baseline socio-economic information and gender analysis; analysis of social impacts
- review of land ownership and land use within the area to be affected and to be leased out for the project for temporary use, including right-of-way of power lines required during construction, the transmission line/s and connection for power evacuation, ancillary and support facilities such as village roads, access roads, and laydown area.
- review of any land ownership issues, cases, complaints filed in relation to the project area.

## 1.3 Scope of Work

The scope of the social compliance audit as per TOR is as follows:

### Land acquisition and involuntary resettlement impacts

- a. Review applicable national and international standards, national laws and regulations concerning land acquisition and compensation and resettlement, applicable national laws and international treatise governing the protection of indigenous people and ethnic minorities, laws governing the development of transmission lines and RoW, the social safeguard requirements of ADB SPS on involuntary resettlement and Indigenous Peoples, and ADB Social Protection Requirements.
- b. Provide socio-economic baseline data on people affected by land acquisition, including tenants, farm workers, and informal land users with particular attention to vulnerable groups (people below the poverty line, elderly, female headed households Information will cover:
  - Demographics
  - Livelihoods and assets
  - Use of the land prior to land acquisition
  - Vulnerabilities
  - Gender Analysis
- c. Determine land lease or land acquisition impacts:
  - Number of affected persons due to physical or economic displacement, permanent or temporary.
  - Extent of impact including reduction in livelihood, and restrictions or loss of access to assets or common facilities among landowners, tenants, workers, informal land users and other persons dependent on the land for livelihood.
  - Viability of livelihood among landowners after land lease or land acquisition. This includes inventory of remaining land and assets, alternative livelihood activities and sources of income.

- Impacts on distinct and vulnerable Indigenous peoples and other vulnerable groups, if applicable
  - Gender-related impacts and risks.
- d. Review land lease or land acquisition process for all project components as against ADB SPS Safeguard Requirement 2 and 3, with particular focus on:
- Consultation and processes followed including an assessment of the adequacy of information disclosed to the landowners and the bargaining power of landowners to negotiate for fair payment or compensation.
  - Policies and laws (if any) that were applied for land lease or land acquisition and compensation and payments for land.
  - Process undertaken on land lease or land acquisition, negotiation, and payment or compensation carried out, including confirmation of third-party validation
  - Identifying lost assets, basis of valuation, and the calculation of payment or compensation and replacement costs of land and other assets impacted, as applicable.
  - If affected people had access to a grievance mechanism and a review of the status of any outstanding grievances, cases in court or other legacy issues related to land acquisition.
  - Record keeping requirements of the land acquisition and / or negotiation process, including survey, census and asset data, compensation agreements, proof of compensation payment / receipt, and consultations (including minutes of meetings).

### **Indigenous Peoples and scheduled tribes (as required)**

- e. Provide an analysis of the ethnicity and ethnic group vulnerability of population in the project area against the distinctiveness and vulnerability criteria to be considered as Indigenous Peoples as per the ADB SPS and conclude whether the ADB SR3 is applicable to the population in the project area.

### **Labor Management**

- f. In the event that there are already project related construction and procurement activities:
- Determine compliance to applicable labor laws and core labor standards, and its application to direct employees, third party employees, contractors and subcontractors.
  - Determine if worker grievance redress mechanism is functional and sufficient. Identify any pending grievances.
  - Determine how procurement and contractor and supplier management policies are implemented in engaging contractors, subcontractors and suppliers.
  - Review selection process, terms of engagement, and monitoring activities. Determine if contractors, subcontractors and suppliers are compliant with national labor laws and ADB Social Protection Requirements.
  - If applicable, Identify sources of solar panels to be used including contract arrangements for the installation, operation, and maintenance. Determine solar panel supplier's exposure to child and forced labor.

### **Other social issues**

- g. Review past and present grievances from internal and external stakeholders, determining their status and the efficacy of the current grievance redress mechanism.

- h. Review legacy issues and claims related to the project arising from E&S issues (e.g unpaid or incomplete land compensation, labour issues, community unrest etc.) or adverse news to identify any reputational risk.
- i. Identify relevant stakeholders to the project, including CSOs or NGOs and document conducted activities during project preparation up to the present. Determine if sufficient activities have been conducted to share information and solicit feedback related to land acquisition and potential impacts to nearby communities. Determine if external grievance redress mechanism is functional and sufficient.
- j. Identify any ancillary or associated facilities and the process of acquisition and compensation package to identified affected persons.
- k. Assess the adequacy of Policies and systems in place (or to be implemented) to ensure compliance with safeguards and other social requirements.
- l. Review the existing organizational structure and the roles and responsibilities of relevant staff on social issues management, monitoring and reporting.
- m. The consultant will provide a status of compliance against ADB SPS, ADB Social Protection Requirements, and applicable national, state, or other local regulations. If issues, concerns, or non-compliances are identified during the audit, the Consultant will:
  - develop a Corrective Action Plan (CAP), as required, with follow-up corrective measures and implementation plan details, parameters and outcome indicators to comply with applicable standards; and
  - assess the need to prepare safeguards documents such as, Resettlement Plan, Livelihood Restoration Plan, Indigenous Peoples Plan (IPP) etc., as required.
  - draft the ToRs for other supplementary studies or documents that may be required as a result of the SCA.

## **1.4 Approach and Methodology**

### **1.4.1 Approach**

The approach followed by the study team in preparation of this assignment is described in brief below:

#### **1.4.1.1 Thorough Examination of the land Procurement Process**

A comprehensive review of the details pertaining to the land procurement process, with a focus on the legal provisions under which land procurement was conducted for the Project.

#### **1.4.1.2 Adequacy Assessment of Land Procurement**

An in-depth assessment of the adequacy of the land procurement process, including the identification of any potential gaps in compliance with governing legal frameworks and applicable reference frameworks. Additionally, the identification and assessment of associated risks.

#### **1.4.1.3 Evaluation of Transmission Line's Right-of-Way (RoW)**

An assessment of the Right-of-Way status for the Transmission Line.

#### **1.4.1.4 Identification and Assessment of Involuntary Resettlement Impact**

The identification and assessment of any involuntary resettlement impacts on Project Affected Households (PAHs), along with proposed measures to avoid, minimize, and mitigate such impacts.

#### **1.4.1.5 Comprehensive Social Compliance Audit**

A diligent examination process, with a specific focus on identifying risks to the project and presenting corresponding mitigation measures.



#### **1.4.1.6 Stakeholder Consultation**

Engagement with affected persons and communities to solicit their input and concerns, with a rigorous documentation process.

#### **1.4.1.7 Site Visit Findings and Secondary Data Review**

Documentation and assessment of findings from site visits, coupled with a review of secondary data. The overall objective is to identify compliance gaps and propose measures for mitigating these gaps and associated risks. This may encompass potential livelihood restoration measures, the establishment of an effective grievance mechanism, and the formulation of implementation arrangements for managing these aspects.

### **1.4.2 Methodology**

#### **1.4.2.1 Step 1: Initial Desk-based Screening**

The study team organized a kick-off discussion with ADB and MSEL to confirm the scope of work, approach to the SCA, expectation from required review, and the related timelines. At the end of the meeting, the study team provided an Information Request List to MSEL, setting out the documents that will be required.

#### **1.4.2.2 Step 2: Desk-based Review**

The kick-off was followed by a desk-based review of information on MSEL, corporate level E&S system, policies, and procedures for land procurement. Further, the desk-based review also includes the:

- Review of the Policies and systems in place (or to be implemented) to ensure compliance with safeguards and other social requirements (with focus but not limited to existing grievance redress mechanisms for workers and community, stakeholders' engagement, HR Policy including contractor and subcontractor management).
- Review of the documents, related to land procurement and involuntary resettlement, if any.
- Review existing baseline socio-economic profile of the communities in the Project.
- Review of the documentation or records of engagement between the government authority, the affected landowners, or users (residential/commercial or any other either directly or indirectly dependent on land or its immovable asset) on land procurement and leasing; records of negotiations and evidence of payment made.
- Land ownership issues, cases, complaints filed in relation to the Project area.
- Confirmation on the presence of any indigenous peoples (IP) or scheduled tribes (ST), IP / ST land ownership etc.
- Other social issues and impacts
- Stakeholder identification and mapping for the Project based on the current planning stage.

EQMS reviewed the provided documentation as per shared RFI (Request of Information) to evaluate the extent to which the potential social impacts of the project have been assessed and management systems developed and the consistency of these assessments with the guidance prescribed in the applicable standards. This includes the following key documents:

- Sample of Land Vetting Documents
- Sample of Land Schedule Documents
- Sample of Land Leas and Land Purchase Documents
- Contractor Agreement Copy
- Community Development Plan
- Grievance Redress Mechanism and sample of grievance register
- Labour Accommodation Plan

- Traffic Management Plan
- Supplier Selection Policy
- Site Security Management Plan
- Procurement Policy
- Documentation of Stakeholder Consultations

#### **1.4.2.3 Step 3: Site Assessment**

- The Social experts of EQMS Consulting Limited conducted the site visit to the Project location from 28 April 2024 to 04 May 2024 and a visit to the corporate office on 21 May 2024. The key activities undertaken during the site assessment has been provided below:
- Site Observation: A meticulous examination of the project location, access roads and other associated facilities (transmission line), aimed at gaining a thorough understanding of the physical setting.
- Assessment of Land Users: Confirmation of the presence of non-titled land users, and informal land users, within the Project affected area. Additionally, an evaluation of the extent of economic displacement impacts resulting from the loss of land due to the Project.
- Identification of Indigenous Peoples (IP): Verification of the presence of IP communities, ownership, use, or claims over land, including transitory or migration -related claims or uses. Assessment of the existing vulnerabilities of the project-affected community, encompassing those impacted by Project components, associated facilities, and project activities. No IP was identified within the study area.
- Stakeholder Consultations: Engagements with local community, authorities/agencies and relevant opinion leaders to gather insights and perspectives.
- Community Consultations: Inclusive consultations with various community segments, including general local communities, fish farmers, farmers, businessmen community, and opinion holders.
- Stakeholder Engagement: Consultations with stakeholders to comprehend the land procurement process, collect key feedback on the Project, and assess the socio-economic baseline of the local community. Detailed socio-economic baseline, assessment of stakeholders, stakeholders' influence over the project and key feedback of stakeholders have been provided in the Initial Environmental and Social Examination (IESE) report for the project.

#### **1.4.2.4 Reporting**

The audit report consists of the following chapter:

Chapter 1: Introduction

Chapter 2: Applicable Reference Framework

Chapter 3: Social Policies and Management System

Chapter 4: Socio-Economic Profile of the Study Area

Chapter 5: Assessment of Labour Procurement Process

Chapter 6: Gap Assessment, Compliance with Applicable Reference Framework and Closure Measures

Chapter 7: Corrective Action Plan

### **1.5 Limitations**

This report has been developed based on the Project level information provided by MSEL (04/08/2024) and professional judgement to certain facts with resultant subjective interpretation. If information to the contrary is discovered, the findings in the SCAR may need to be modified accordingly. This SCA report has following information:

- The information presented in the report is based on the information made available by the client, reported by the project management team, and as understood per the consultation with the local community.
- Information regarding the total amount of the land is yet to be confirmed by MSEL as the land procurement process of the project is still undergoing.

The assessment of MSEL's policy is based on the available documented information provided by MSEL. The report is not intended to meet any national, state, or local statutory requirements and for any regulatory submission (as part of any permitting process or otherwise).

## 2 APPLICABLE REFERENCE FRAMEWORK

The development of the Social Compliance Audit (SCA) is aligned to the following reference framework:

- ADB's Safeguard Policy Statement (ADB SPS 2009)- Safeguard Requirement (SR) 1 on Environment, SR2 on Involuntary Resettlement (IR), and SR3 on Indigenous People (IP)
- ADB's Social Protection Strategy (2001)
- ADB's Gender and Development Policy (1998)
- ADB's Access to Information Policy (2019)
- The International Labour Organization (ILO) conventions covering core labor standards and the basic terms and conditions of employment
- IFC/ERBD Guidance on Worker Accommodation
- The local administrative structure and applicable regulations on land purchase, compensation for permanent land purchase and right of way for the transmission line.
- Relevant National Laws and guidelines.

### 2.1 ADB's SPS and Other Policies

#### 2.1.1 ADB's Safeguard Policy Statement, 2009

ADB's SPS, 2009 describes the policy objective, its scope and triggers and principles of (i) environmental safeguards; (ii) involuntary resettlement safeguards; and (iii) indigenous people's safeguards.

The objective of involuntary resettlement safeguards is (i) avoid involuntary resettlement where possible; (ii) if avoidance is not possible, minimize involuntary resettlement by exploring project and design alternatives; (iii) enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and (iv) improve the standards of livings of the displaced poor and other vulnerable groups.

The involuntary resettlement safeguards policy covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets income sources, or means of livelihoods) because of; (i) involuntary acquisition of land, or (ii) involuntary restriction on land use or on access to legally designated parks and protected areas. It covers them whether losses and involuntary restrictions are full or partial, permanent or temporary.

The three (3) important elements of involuntary resettlement safeguards are: (i) compensation at replacement cost for lost assets, livelihood, and income prior to displacement; (ii) assistance for relocation, including provisions of relocation sites with appropriate facilities and services; and (iii) assistance for rehabilitation to enhance, or at least restore, the livelihood of all displaced persons relative to pre-project levels and to improve the standard of living of displaced poor and other vulnerable groups.

The main objective of the ADB SPS - Safeguard Requirement 3: Indigenous Peoples is to protect the rights, dignity, culture, and livelihoods of indigenous peoples who may be affected by ADB-financed projects. The policy aims to ensure that indigenous peoples are not harmed by the projects, but rather benefit from them in a culturally appropriate way. The policy also aims to ensure that indigenous peoples are consulted and involved in the decision-making process of the projects, and that their consent is obtained for any activities that affect their lands, territories, natural resources, or cultural heritage.

### 2.1.2 ADB's Gender and Development Policy, 1998

The Gender and Development Policy (GAD Policy) is aimed at integrating gender issues in the Bank's macroeconomic sector and project work. The GAD strategy is based on consideration of social justice, gender equity and on substantial evidence that investments in women are vital to achieving economic efficiency and growth. The key elements of the GAD policy include the following:

- **Gender Sensitivity:** to observe how ADB operations affect women and men and to take into account women's needs and perspective in planning its operations
- **Gender Analysis:** to assess systematically the impact of a project on men and women, and on the economic and social relationship between them.
- **Gender Planning:** to formulate specific strategies that aim to bring about equal opportunities for men and women.
- **Mainstreaming:** to consider gender issues in all aspects of ADB operations, accompanied by efforts to encourage women's participation in the decision-making process in development activities.
- **Agenda Setting:** to assist governments in formulating strategies to reduce gender disparities and in developing plans and targets for women's and girls' education, health, legal rights employment and income-earning opportunities.

### 2.1.3 ADB Social Protection Requirements, 2001

The Social Protection Strategy of 2001, is a set of policies and programs designed to reduce poverty and vulnerability by promoting efficient labor markets, diminishing people's exposure to risks, and enhancing their capacity to protect themselves against hazards and interruption/loss of income. The five components identified for social protection include labor markets, social insurance, social assistance, micro and area-based approaches and/or child protection.

### 2.1.4 ADB's Access to Information Policy, 2019

The objective of the policy is to promote stakeholder trust in the Project and to increase development impacts of the Project's activities. The Policy reflects the Project's commitment to transparency, accountability, and participation by stakeholders. The policy also recognizes the right of people to seek, receive, and impact information about Project's operation. The key principle of the policy is:

- Clear, timely, and appropriate disclosure of information
- Presumption in favor of disclosure
- Limited expectations
- Proactive disclosure
- Sharing of information and ideas
- Providing information to project-affected people and other stakeholders
- Country and client ownership
- Clear appeal process
- Continuous monitoring

## 2.2 National Laws and Regulations

All legal provisions relevant to environmental protection applicable to the planning, construction, operation, and decommissioning of the proposed project are identified and summarized in Table 2-1 along with their applicability to the proposed project.

**Table 2-1: National Legal Provisions Applicable to the Proposed Project**

Act/Rules/ Law/Ordinance	Responsible Agency- Ministry/Authority	Key Features/Remarks	Applicability
Acquisition and Requisition of Immovable Property Act (ARIPA), 2017	Ministry of Land	<ul style="list-style-type: none"> <li>Current GOB Act, relating to acquisition and requisition of land.</li> <li>According to the law, the affected person will get an additional 200% of the assessed value for land and an additional 100% for structures, trees, crops, and other assets.</li> <li>This law deals with social and economic impacts as a consequence of land acquisition.</li> </ul>	Not Applicable – The majority of the lands have been leased by the project developers, with only a small amount of land being purchased through the willing buyer-willing seller process.
Penal Code, 1860	Ministry of Law, Justice, and Parliamentary Affairs	<ul style="list-style-type: none"> <li>Valid provisions related to pollution management, environment protection, and protection of health and safety. Chapter XIV of the Penal Code provides offenses effective public health, safety, convenience, decency, and morals:</li> <li>Section 277: Falling Water or Public Spring or Reservoir.</li> <li>Section 278: Making Atmosphere Noxious to Health.</li> <li>Section 284: Negligent Conduct with respect to Poisonous Substance.</li> <li>Section 285: Negligent Conduct with respect to Fire or Combustible Matter.</li> <li>Section 286: Negligent Conduct with respect to Explosive Substance.</li> </ul>	Not Applicable - As the proposed project does not foresee any pollution impact on the surrounding environment.
Fire Prevention & Extinguish Act, 2003 and Rules, 2014	Ministry of Home Affairs	<ul style="list-style-type: none"> <li>Regulatory enactments in regard to the prevention, the successful extinguishing of fire, and also reduction of damages and consequences of fire.</li> <li>States to obtain a license from the Director General of Fire Service and Civil Defense in case of any warehouse.</li> </ul>	Not Applicable - The proposed solar project does not involve activities that may cause a fire accident.

Act/Rules/ Law/Ordinance	Responsible Agency- Ministry/Authority	Key Features/Remarks	Applicability
Factories Act, 1965, and the Factories Rules, 1979  Bangladesh Labor Act, 2006, and amendments 2009, 2010, 2013 and 2018  Bangladesh Labor Rules, 2015	Department of Labor/Department for Inspection of Factories and Establishment/ Ministry of Labor and Employment	<ul style="list-style-type: none"> <li>• Pertains to the occupational rights and safety of factory workers and the provision of a comfortable work environment and reasonable working conditions.</li> <li>• Provides health, safety, and well-being of the workforce during the project life cycle.</li> <li>• Children under 18 years are not allowed to be employed during the project life cycle.</li> <li>• Safety precautions regarding explosive or inflammable dust/gas, protection of eyes, protection against fire, work with cranes and other lifting machinery, and lifting of excessive weight.</li> <li>• Safety measures like appliances of first aid, maintenance of safety record books, rooms for children, housing facilities, medical care, group insurance, etc.</li> <li>• No building, wall, chimney, bridge, tunnel, road, gallery, stairway, ramp, floor, platform, staging, or other structure, whether a permanent or temporary character, shall be constructed, situated, or maintained in any factory in such a manner as to cause risk of bodily injury (Rule 38) of factory rules 1979, etc.</li> </ul>	Applicable - It is mandated to prioritize the health, safety, and well-being of the workforce throughout the project life cycle. Additionally, it is stipulated that individuals under 18 years of age are not permitted to be employed during the project's duration, necessitating compliance with this regulation.
Antiquities Act, 1968, and Antiquities Preservation Rules, 1986	Department of Archaeology, Ministry of Cultural Affairs	<ul style="list-style-type: none"> <li>• No person shall deal in antiquities except under and in accordance with a license granted by the Director.</li> <li>• No person shall remove any object of the immovable protected antiquity.</li> <li>• No person shall damage, alter, deface, or imperil immovable protected antiquity.</li> <li>• Any person preserving or storing any kind of movable antiquity without a license shall produce it to the Director on demand for verification of the source of its possession.</li> </ul>	Not applicable - No archaeological or historic cultural sites are present on the project site and surroundings.

## 2.3 Social-Related Policies in Bangladesh

The main policies guiding environmental and social protection and conservation in Bangladesh are outlined in the following Table 2-2.

**Table 2-2: Policies and Plans Relevant to the Project**

Policy/Plans	Responsible Agency-Ministry/Authority	Key Features	Applicability
Bangladesh Climate Change Strategy and Action Plan, 2009	Ministry of Environment, Forest and Climate Change	<ul style="list-style-type: none"> <li>Food security, social protection, and health.</li> <li>Comprehensive disaster management.</li> <li>Infrastructure.</li> <li>Research and Knowledge Management.</li> <li>Mitigation and low carbon development.</li> <li>Capacity building and institutional strengthening.</li> </ul>	Applicable - As the proposed project has the potential to generate air pollutants during both its construction and operation phases through the use of generators and other machinery.
National Agriculture Policy, 2018	Ministry of Agriculture	<ul style="list-style-type: none"> <li>Ensure food security and socio-economic development through the productivity of crops, boosting production and raising farmers' income, diversifying crops, producing safe foods and developing a marketing system, profitable agriculture &amp; use of natural resources.</li> <li>Increasing food availability, rights, and purchasing power by increasing crop productiveness and production.</li> <li>Discourage the use of agricultural land for non-agricultural work to ensure sustainable food security.</li> <li>Soil, water, flora, fauna, and overall environmental conservation and effective use initiative adoption.</li> </ul>	Not Applicable –Project authority obtain permission from the Department of Agriculture for establishment of this project in which this project site is identified as fallow land). However, there is .8 acres of land (within 68 acres) used for agricultural activities. But this activity is seasonal (one time) and rest of the time the area remain fallow.
National Land Use Policy, 2001	Ministry of Land	<ul style="list-style-type: none"> <li>To prevent arbitrary use of land.</li> <li>To formulate guidelines for the maximum use of land according to the natural differences in different parts of the country.</li> </ul>	Not Applicable - The proposed project will be established on privately owned land.



Policy/Plans	Responsible Agency-Ministry/Authority	Key Features	Applicability
		<ul style="list-style-type: none"> <li>In the case of land acquisition for urbanization and development projects or any other purpose, to ensure its best use by acquiring the least amount of land and to avoid the acquisition of excess land as required.</li> <li>Arranging for the preservation of such lands, especially government Khas lands, which may be required in the future for various development activities.</li> <li>To ensure that the use of land is compatible with the natural environment.</li> <li>Making the best use of land to alleviate poverty and increase employment.</li> <li>To play a helpful role in preventing the increase in the number of landless.</li> </ul>	
National Tourism Policy, 2010	Ministry of Civil Aviation and Tourism	<ul style="list-style-type: none"> <li>Development of tourism resources of the country and their maintenance.</li> <li>Two special sections of the policy focus on 'archaeological and historical sites' and 'conservation of wildlife'.</li> </ul>	Not Applicable - As the proposed project establishment will not impact any tourist spots, heritage sites, etc.
National Occupational Health and Safety Policy, 2013	Department for Inspection of Factories and Establishment/ Ministry of Labor and Employment	<ul style="list-style-type: none"> <li>Necessary measures to ensure workplace safety and health protection considering international Conventions/Declarations/Recommendations/Instruments.</li> <li>Review and updating of all laws relating to Occupational Health and Safety (OHS).</li> <li>Inclusion of OHS issues in the policies and programs of all related Ministries and agencies.</li> <li>Establish labor courts in the industrial zone so the workers and trade unions can have easy access to the courts for implementing the mandatory provisions of OHS.</li> <li>Impose mandatory terms and conditions upon construction agencies to follow the OHS policies during govt. run construction works.</li> <li>To ensure maximum safety standards during construction and implement all standards and regulations in an internal safety environment.</li> </ul>	Applicable - As the policy concerns the occupational rights and safety of workers, ensuring a comfortable work environment and reasonable working conditions for all employees.

## 2.4 Applicability of ADB's Safeguard Policy Statement and other Policies to the Project

The applicability of ADB safeguards and other policies to the Project has been summarized below:

**Table 2-3: Applicability of ADB's Safeguard Policy Statement and Other Policies**

Sr. No	ADB Safeguard	Applicability/ Compliance
1.	Safeguard Requirement 1: Environment	<b>Applicable</b> An Initial Environmental & Social Examination (IESE) for the project has been undertaken to identify and assess any potentially adverse environmental and social impacts associated with the proposed Project, assess compliance with applicable laws and the applicable reference framework, determine the measures needed to prevent or minimize and mitigate the adverse impacts, and identify potential environmental and social opportunities, including those that would improve the environmental and social sustainability of the Project.
2.	Safeguard Requirement 2: Involuntary Resettlement	<b>Applicable</b> The land procured for the solar power plant is privately owned. The majority of the land (54.0%) is beel, while 0.70% is agricultural land, and 45.30% is used for aquaculture. No structures, such as houses, buildings, mosques, or other religious institutions, were found during the site visit and land survey within this land. Although the procurement did not cause any physical displacement, it did result in economic displacement.
3.	Safeguard Requirement 3: Indigenous Peoples	<b>Not Applicable</b> No indigenous people or group were found during the socio-economic survey and stakeholder consultation period.
4.	ADB's Gender Development Policy, 1998	<b>Applicable</b>
5.	ADB's Social Protection Strategy, 2001	<b>Applicable</b>
6.	ADB's Access to Information Policy, 2019	<b>Applicable</b>

## 3 PROJECT DESCRIPTION

### 3.1 Project Overview

Muktagacha Solartech Energy Limited (MSEL or the Client) proposes to develop and operate 20 MW AC Solar Photovoltaics Power Plant on 68 acres of land along with approximately 8 km long overhead transmission line. As per the MSEL, 51.95 acres (76.40%) of land has been taken from 110 landowners for lease for 22 years, and 3.01 acres (4.43%) has been purchased from local people through a willing buying and willing selling process. The Proposed PV Solar Power Plant is located near Muktagacha town in Mymensingh division, Bangladesh. Project GPS coordination is 24°43'51.12" N 90°11 '53.12"E. The client intends to develop a utility – scale grid – connected, ground mounted solar photovoltaic (PV) power plant project. The plant would provide a cost-efficient renewable energy source to supplement the existing energy provided by other sources to the grid. Based on the installation scale of the photovoltaic power plant and the voltage level of the surrounding grid, the appropriate voltage level for the photovoltaic power plant is 33KV, making it suitable to connect to the grid using a double-circuit three-phase line.

The plant would use a renewable method of generating electrical power by converting solar radiation into direct current electricity using silicon panels that exhibit the photovoltaic effect. Photovoltaic (PV) power generation employs solar panels composed of many solar cells containing silicone.

The plant capacity would be 29 MWp DC that would be transformed to 22.2 MW AC. The system would include the installation of the fixed array, where the module tilt angle is 16 degrees. In the plant, 625Wp monocrystalline silicon cell is selected as the solar cell module and a 300KW inverter is selected for the capacity of the inverter. The inverter will be connected to the boost substation after the first stage boosting through the local boosting transformer in the photovoltaic field, and then connected to the power system after the second stage boosting through the main transformer- is proposed to be adopted for photovoltaic boost system, to deliver electrical energy economically, and reliably to the grid. **Error! Reference source not found.** shows the key project information of the proposed project.

**Table 3-1: Key Project Information**

<b>Project Company</b>	Muktagacha Solartech Energy Limited, MSEL	
<b>Type of Business</b>	Solar Power Plant	
<b>Project Location</b>	Proposed Solar Power Plant	Union: Kashimpur and Mankon Upazila: Muktagacha, District: Mymensingh
	Proposed Transmission Line Route	Union: Mankon, Basati and Ward-01, Upazila: Muktagacha, District: Mymensingh
<b>Plant Configuration</b>	29MWp DC/ 22.2MW <sub>AC</sub> Ground mount Solar PV Power Plant	
<b>Contracted Plant Capacity</b>	20 MW <sub>AC</sub> Solar PV Power Plant	
<b>AC/DC Ratio</b>	1.45	
<b>Solar Power Plant Land Area</b>	Approximately 68 acres	
<b>Project Cost</b>	34.67 Million USD	

<b>Transmission Line</b>		As per the instruction from BPDB, the solar power will be injected into the grid via 33/11kV <i>Muktagacha</i> substation which is approximately 8 km northeast side from the proposed project site. No towers will be constructed newly, rather only two poles will be installed at the existing right of way of the access road of the solar power plant/ private land. Installation of these two poles is in the scope of BREB. BREB has not finalized the location yet.
<b>Major Component</b>	<b>Photovoltaic Modules</b>	Module: Monocrystalline Silicon Module Each Module Capacity (DC rating): 630 Wp Total Number of Module: 46,368
	<b>Photovoltaic Array</b>	Installation Mode: Fixed Array
	<b>String</b>	Modules per String: 28 String Count: 1656
	<b>Inverters</b>	Scheme: String Inverter Total Number of Inverters: 80 Inverter Model:SG320HX-20 Inverter Rating (KW): 300@51 DEG
	<b>Transformer</b>	Total Number of Transformer:8 Capacity: 3MVA
<b>Project Duration</b>		20 years from COD
<b>PV Cleaning Water Volume</b>		2 liters/module (18 cleaning cycles per annum)
<b>Water Supply Source</b>		Ground Water
<b>Operation and Maintenance</b>		Muktagacha Solartech Energy Limited, MSEL

Source: Technical Feasibility Report, May 2024, MSEL, and Plant Layout Plan

## 3.2 Project Site

The project area lies in south central part of the country. Around 68 acres of land is explored by MESL for PV power generation. MSEL have already owned 54.96 acres of land through lease and purchase. As per the MSEL, 51.95 acres (76.40%) of land has been taken from 110 landowners for lease for 22 years, and 3.01 acres (4.43%) has been purchased from 27 local people through a willing buying and willing selling process. Their purchase work is still ongoing with 6 local people for 3.47 acres (5.10%) of land. Moreover, they are also trying to buy more 9.57 acres of land (14.07%) from approximately 10 landowners. The land inside the project boundary is at least 4m to 25m elevated from mean sea level (source: DEM, 2024). Currently, concrete poles have been positioned at regular intervals around the proposed power plant area to designate its boundaries.

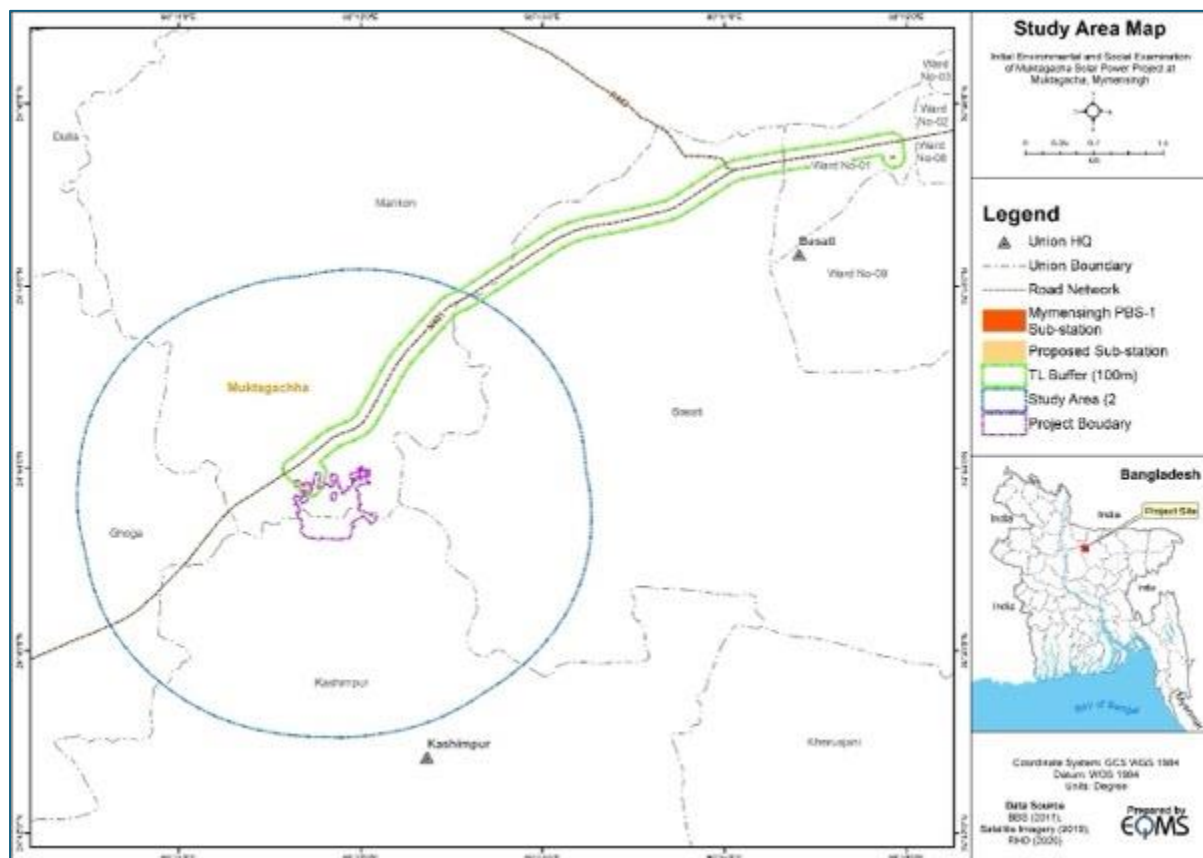
As per site visit and discussion with local focal person, most of the land is wet land (marsh land), not used for agriculture or fish cultivation. The rest of the land is used for seasonal agricultural purposes and fish farming purposes. Up until 20 years ago, the area remained largely the same; however, at that time, there was no water hyacinth, and locals used to cultivate Boro paddy, a local variety of rice suitable for low-lying areas that can withstand flooding. About 15 years ago, water hyacinth completely overtook the area, and the cost of removing these aquatic plants became prohibitively high due to their invasive nature and exponential growth. Considering the high cleaning costs, utilizing this land for growing paddy became economically unfeasible, leading the locals to abandon the area.

The boundaries of the proposed solar power plant area are –

- **North:** Residential Area and Road
- **South:** Pond and Agricultural Land
- **East:** Pond and Agricultural Land
- **West:** Road and Agricultural land

The location of the proposed project site is shown in **Error! Reference source not found.**

**Figure 3-1: Location Map of the Project Area**



Source: EQMS, 2024

As per Technical Feasibility Report May 2024, the current power plant area has a stream pattern network originating from western and northern western part of plant boundary and routing towards southeast direction. Moreover, approximately 60% of the land remains submerged in water up to 15 feet for nearly nine months each year. Currently, there is no water drainage system in the proposed project area. There was a drainage system from the proposed project land to the Dorar Khal through which the rainwater passed. The total length of the drain was around 1 to 1.5 km. But, due to the new agricultural lands, fish farms and buildings being constructed there, the drainage system got blocked. According to consultations with local residents about 15-20 years ago, during excessive flooding, barriers were removed to prevent the surrounding areas from being inundated and to allow the floodwater to flow naturally through the canal.

Right now as there is no canal, channel or drainage system to pass the water .

As per Contour Survey Report, July 2023 there is another water passing area present which is about 1024 m NW from the power plant site. The water level at the areas is about 10.63 m.

Additionally, the proposed solar power plant will transmit power via an existing 33 KV overhead transmission line, spanning roughly 8 km from the solar plant to the Muktagacha substation. Only two



poles will need to be installed at the access road right-of-way to connect the solar power plant to the existing transmission pole. This installation will not cause any physical or economic displacement. According to MSEL, pole installation will be managed by BREB, while MSEL will handle the stringing of the transmission line onto the poles. At present total 264 poles present at the transmission line route from solar power plant to Muktagacha substation. **Error! Reference source not found.** shows the selective photographs of the Project Site. **Error! Reference source not found.** and **Error! Reference source not found.** show contour survey map of the existing water system around the project site.

**Figure 3-2: Selective Photographs of the Project Site**

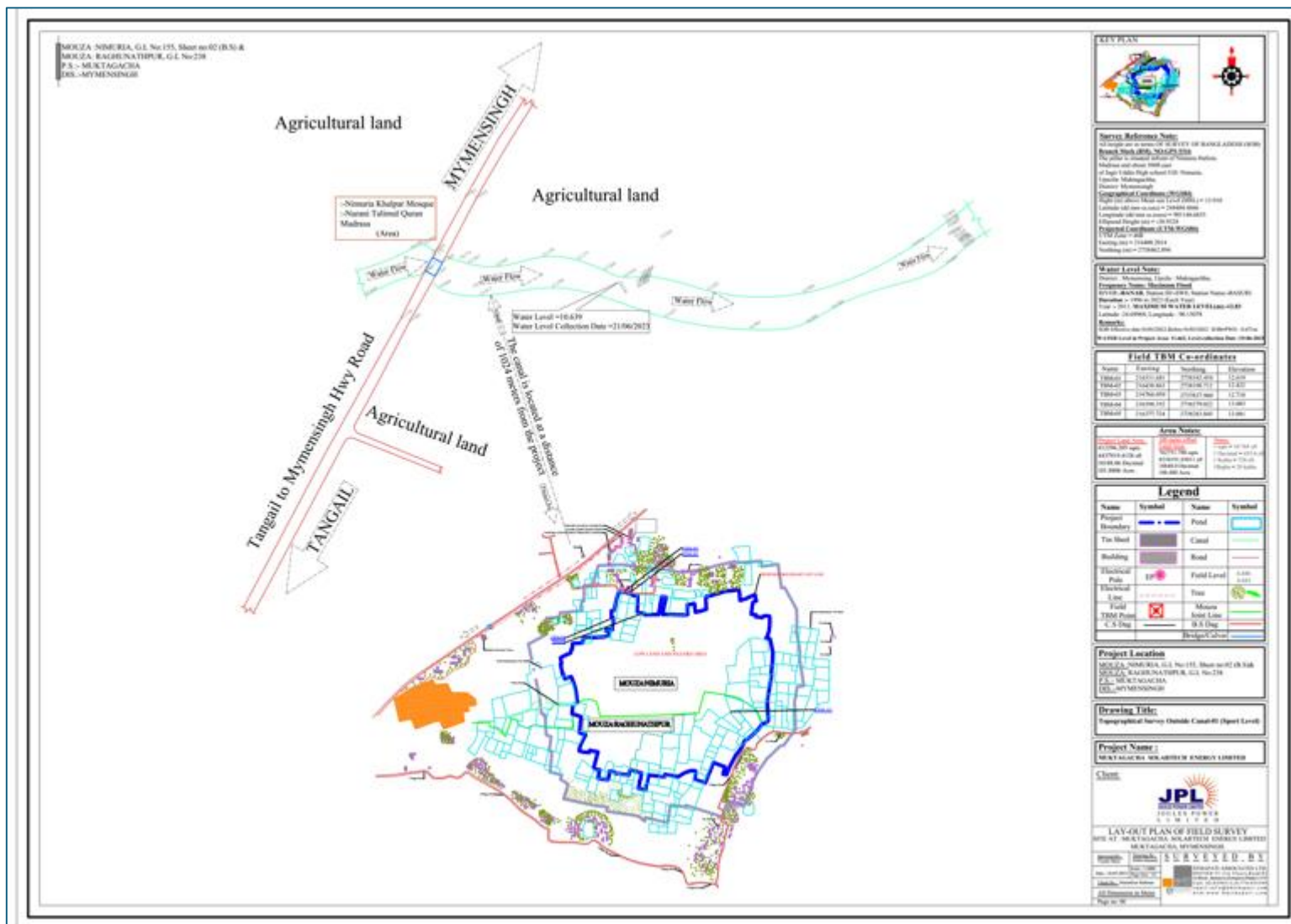
	
Residential Area near north side of the project area	Agricultural field
	
Marsh land	Water hyacinth grows on marsh land
	
Aquaculture	Transmission line route



Dorar Khal (through which rainwater passed) situated at East South East location from the project site

Source: EQMS Field Study Team, April 2024

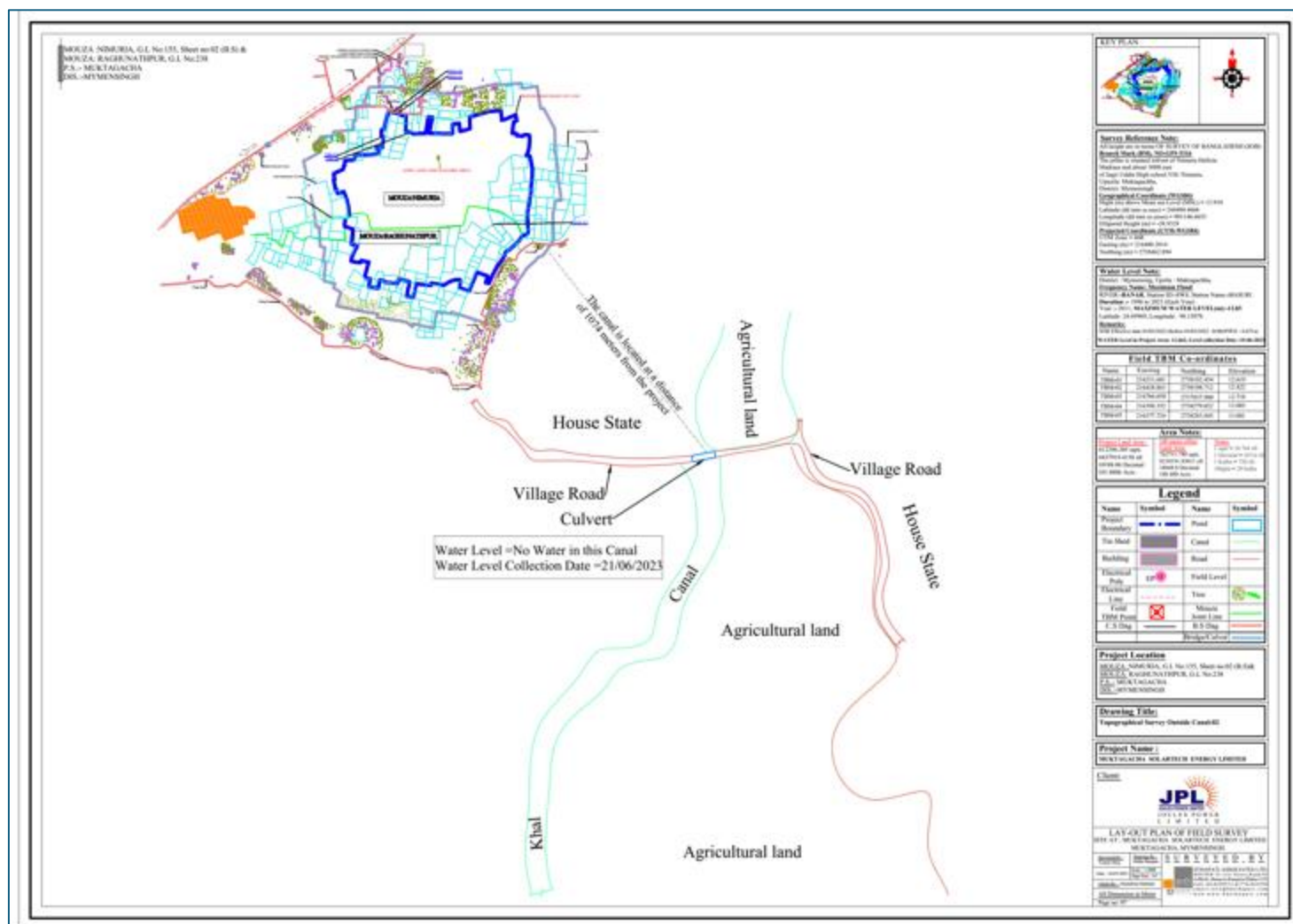
Figure 3-3: Map of the Outside Canal-01 (Existing Water System, Nimuria End)



Source: MSEL, May 2024



**Figure 3-4: Map of the Outside Canal -02 (Existing Water System: Raghunathpur End/Dorar Khal)**



### 3.2.1 Access to the Site

The site is accessible from Nimuria and Raghunathpur end from National highway (N401). As per discussion with the project authority, the project will use Nimuria end road as a project site access road. At Nimuria end, the site is accessible via an existing 3m wide approach road from highway road (N401) to access the site. In terms of widening of existing access road, no further land acquisition is required. The present condition of the project site approach road is given in Figure 3-5.

**Figure 3-5: Present Condition of the Project Site Road**



Source: Field Study Team, April 2024

#### 3.2.1.1 Highway

The project site is accessible from Dhaka through Tangail-Mymensingh Highway (N401). The site is about 140km away from the city of Dhaka, the capital of Bangladesh. This is a relatively developed highway road near the site, and the highway is on 226m from the northwestern boundary of the project site. The N401 road is an asphalt concrete road. The condition of the highway (N401) is good and ensures good connectivity of this part of the Upazila to the neighboring districts viz. Rajshahi and Dhaka. The present condition of the existing highway road is given in Figure 3-6.

**Figure 3-6: Present Condition of the National Highway (N401)**



Source: Technical Feasibility Report, May 2024

### 3.2.1.2 Railway

There is no direct or nearest connection between the project site to the railway station. The nearest station is Mymensingh railway station. The approximate ariel distance is about 18km. This route will not be used for any kind of project activities.

### 3.2.1.3 River Transportation

135 meters wide *Shitalakshya* River is located at a distance of 12.5km from the northeast plant boundary. This route will not be used for any kind of project activities.

## 3.2.2 Key Features of Site and Surroundings

The details of the site setting, and surroundings of the proposed project site are given in Table 3-2.

**Table 3-2: Salient Features of the Project Site and Surroundings**

SL#	Particulars	Details
1.	GPS Coordinates	24°43'51.12" N 90°11 '53.12"E
2.	Administrative Location	Union: Kashimpur and Mankon, Upazila: Muktagacha, District: Mymensingh
3.	Climatic Condition	<p>Temperature: The data analysis of 32 years shows that the monthly maximum temperature varies from 29.5°C to 38.1°C whereas the monthly minimum temperature varies from 4.7°C to 22.8°C.</p> <p>Humidity: Monthly Average Relative humidity in the area is generally above 80% from May to December.</p> <p>Rainfall: The annual average of total rainfall is recorded as 2205.9 mm/year.</p>
4.	Area of the Project	Approximately 68 acres
5.	Nearest Water Bodies	The nearest river is Shitalakshya about 12.5 km away from the power plant site.

SL#	Particulars	Details
6.	Nearest Highway	The nearest highway is the Tangail-Mymensingh highway which is about 226m NW from the power plant site.
7.	Nearest Railway Station	The nearest railway station is Mymensingh station, which is about 18 km away from the power plant site
8.	Archeological Site	The nearest archeological site is the Muktagacha Shiva temple, which is about 6.75 km from the proposed power plant site.
9.	Protected Areas (Pas)	No reserve or protected forest area was found in the study area. The nearest National Park is Madhupur national park which is only 5 km away from the power plant site.
10.	Ecologically Critical Area (ECAs)	The nearest ECA from the proposed project site is Tanguar haor which is 92 km away from the proposed power plant site
11.	Ramsar Sites <sup>1</sup>	The nearest Ramsar Site is the Sundarban Reserve Forest (92km) from power plant site
12.	Important Bird Areas (IBAs)	The nearest IBA is Madhupur National Park (5km) form power plant site
13.	Seismicity	As per the Bangladesh National Building Code (BNBC) 2020, the project site is situated in Zone-4 (seismic coefficient is 0.36 g)
14.	Risk	Flooding, Seismicity/Earthquake, Lightning
15.	Socio-economic factors	No resettlement and rehabilitation

### 3.3 Project Component

The project component during construction and operation phase mainly includes the

- Construction Phase facilities will be mainly temporary and will be removed before COD.
  - **Site office:** For the site office setup, MSEL plan is to use two container offices with the following specifications: These containers will serve as temporary offices for project managers, engineers, and administrative staff working on-site. Total two (02) container will be deployed. Dimension of each container will be length of 40ft (12.2 meters), a width of 8ft (2.44 meters), and a height of 8.5ft (2.59 meters) The container offices will be equipped with the necessary amenities to facilitate the day-to-day operations and project management activities. These facilities are office room, sanitary facilities, kitchen etc.

<sup>1</sup> A Ramsar site is a wetland site designated to be of international importance under the Ramsar Convention, also known as "The Convention on Wetlands", an international environmental treaty signed on 2 February 1971 in Ramsar, Iran, under the auspices of UNESCO. It came into force on 21 December 1975, when it was ratified by a sufficient number of nations. It provides for national action and international cooperation regarding the conservation of wetlands, and wise sustainable use of their resources. Ramsar identifies wetlands of international importance, especially those providing waterfowl habitat.

- **Storage Area:** One container will be used for storage area. Storing of construction materials, tools, and equipment etc. Dimension of the container will be 19' 4" long x 7' 9" wide x 7' 10" high.
- **Labour Shed:** A plot of rented land, measuring approximately 0.3 acres (30 decimals), will be used for temporary labor housing. A dormitory will be constructed to accommodate thirty (30) workers and twenty (20) security personnel. This dormitory will feature essential amenities, including four washing facilities and one cooking facility. The dormitory will have dimensions of 75 feet by 15 feet. This will be semi pucca house.
- **Other Facilities :** Sanitary facilities, medical facility (first aid box), security facility, drinking water facility, CCTV camera coverage (construction site, residential area, office area), electricity coverage and safety signage to facilitate the day-to-day operations and project management activities.
- Operation Phase
  - **Main Component:** solar power plant (PV module, inverter, module mounting system etc.) and overhead transmission line.
  - **Auxiliary Component:** UPS, oil filled auxiliary transformer, control room, battery room, SCADA room, warehouse, guest house, guard barrack etc., substation etc.

### 3.3.1 20MW<sub>AC</sub> Power Plant

The proposed 20MW<sub>AC</sub> plant is a utility scale grid interactive PV plant. It will be ground mounted solar panel. MSEL is planning to install their proposed solar park (PV-based power plant) at 68 acres of land. For simulation, JA make PV modules with 625Wp panel and Sun grow string inverter (SG320HX-20) are considered. The performance ratio of the system is 84.35%. The simulation result shows an annual energy yield of 42,221.12 KWh for the first year.

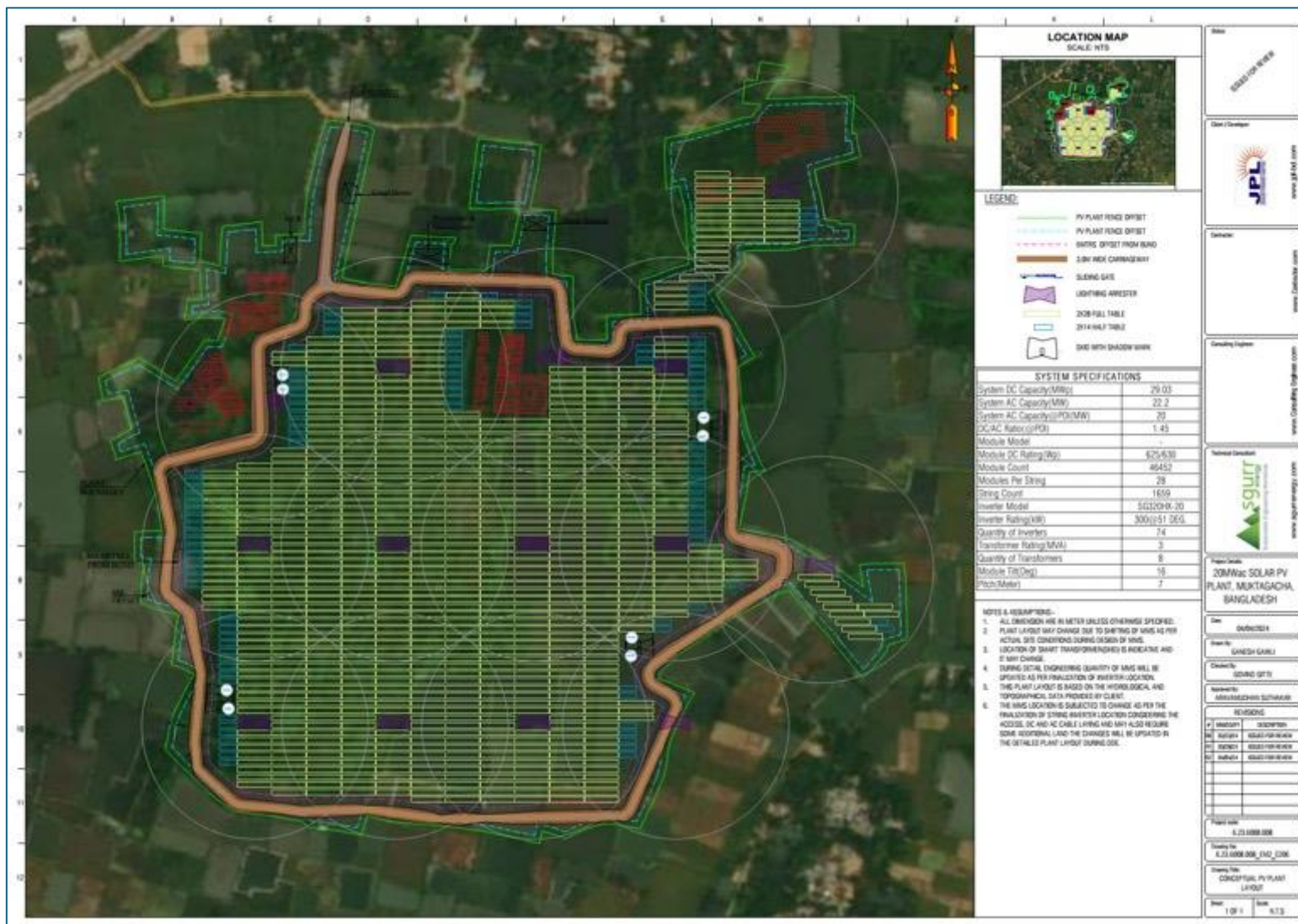
The main components of the grid connected solar plant are PV modules, inverters, module mounting system, step up transformer, grid connected interface etc. Moreover, inside the project boundary warehouse, guesthouse, substation, will be developed.

- **Module Selection:** In the plant, 46452 pieces JA make 625/630 Wp monocrystalline silicon photovoltaic modules will be used.
- **Inverter:** String inverter scheme is adopted at the current stage of the project. String inverter concept uses multiple inverters for multiple strings of modules. String inverters are being used as they can cover a very wide power range and can be manufactured more cheaply on a production line than central inverters. Additionally, they provide MPPT on string level, with all strings being independent of each other. String inverters can be placed close to PV array, which leads to shorter DC cable length and lower DC cable loss. 74 sets of inverters have been selected for the project. There will be isolated transformers in the grid-connected inverter. The String inverter signals will be monitored through the SCADA System through PLCC Communication.
- **Module Mounting System (MMS):** Considering the Global tilted Irradiation, specified yield, module mounting structure cost, ground coverage ratio, economy, maintenance and other factors, a fixed installation method is adopted for the project at the current stage. Therefore, the optimum fixed tilt angle of the cell module in this project is determined to be 16 degrees. The pile height is 7m, considered High flood level. Also, The foundation for the MMS will consist of prefabricated hollow concrete (PHC) piles, which will be supplied by a PHC pile manufacturer.
- **Substation:** MSEL plant to install An Air-Insulated Switchgear (AIS) substation. It functions as a key component in managing and distributing the electrical power generated by the solar panels. It includes circuit breakers, disconnectors, and transformers. The substation plays a crucial role in converting and transmitting solar energy to the grid, ensuring a reliable power supply.



- **Step up transformer:** The output from inverters generally requires a further step-up in voltage to reach the AC grid voltage level. The step-up transformer takes the output from the inverters to the required grid voltage depending on the level of power evacuation. A total of 8 transformers with capacity of 3MVA each is proposed for this project.
- **PV Connector:** Two types of connectors will be required. One is an MC4 connector. This type of connector will be made of polycarbonate materials and zone resistant, halogen-free, dustproof, non-conductive, UV resistant, ammonia resistant and inflammable. Connectors shall be suitable for an ambient temperature range of -40°C to 90°C and the upper limiting temperature shall be 105°C when connected. Another one is Y connector. Y connectors shall be hermetically sealed pre-assembled over molded type ready to plug with module connectors. Maximum designed temperature shall be considered as 90°C and humidity of 95%.
- **Earthing:** It shall be provided for all telecommunications and electronic facilities.
  - PV module earthing and components shall be considered as per module manufacturer guideline.
  - The earthing system for solar array shall consist of earth mat/Earth grid to be laid at the depth of 600 MM below the ground. Earth mat shall be a mesh of interconnected bare Cu wire or Cu strip laid in the solar farm for the purpose of earthing/grounding.
  - The earthing network within the PV plant shall be of bare Cu wire or strip. Each piece of equipment shall be earthed through a suitably sized earthing conductor. Each piece of equipment shall be earthed through an additional protective conductor for equipotential bonding.
  - All the earthing stations shall be provided with test links and located at 150mm above ground level in an easily accessible position for testing.
  - Lightning arrestors earthing system shall be interconnected to main earth grid for equipotential bonding.
  - Each MV transformer/Smart Transformer Station shall have a minimum of four dedicated earthing stations. All the cable trays installed shall be earthed after every 2mtrs. **Error! Reference source not found.** shows the plant layout map.

Figure 3-7: Plant Layout Map



Source: MSEL, May 2024

### 3.3.2 Auxiliary Power System

Auxiliary power system for this project will be for the auxiliary loads such as indoor and outdoor lighting, fan, AC, Guest House, Barrack Room, Warehouse, 110V DC converter units, and SCADA monitoring system and UPS etc... This comprises of dedicated auxiliary transformer connected to the 33kV switchgear located at MCR with suitable protective equipment.

In this project each Smart Transformer Station shall have its own auxiliary power supply system comprising of Auxiliary Transformer, UPS, AC distribution board will be covered in Smart Transformer Station. Distribution boards shall be of form 3B.

### 3.3.3 Energy Yield Assessment

Sgurr Energy, the appointed firm for conducting feasibility study has computed the annual energy yields for 29MWp DC/ 20MWac Solar PV plant using the basic designs and indicative layout. N-type Monocrystalline PV module technology with String inverters and fixed tilt type Module mounting structure was used for designing the project.

#### P50 Energy Yield Predictions

This section presents the independent energy yield prediction for the 20MWAC solar PV Plant with JA Solar PV modules and Sungrow inverters. Table 3-3 summarizes the solar PV power plant, the available resource, the losses and the predicted P50 yields.

#### Energy Yield prediction for Proposed 20MWac Solar PV plant

**Table 3-3:Energy Yield Prediction for Proposed 20 MWac Solar PV Plant**

SL#	Energy Yield Prediction for 20MW <sub>AC</sub> PV Plant	
1.	DC Capacity (MW <sub>P</sub> )	29.02
2.	Installed AC Capacity (MW <sub>AC</sub> )	22.20
3.	Contracted AC Capacity (MW <sub>AC</sub> )	20
4.	Pitch (m)	7.0
5.	Tilt Angle (°)	16
<b>6.</b>	<b>Solar Resource (SolarGIS data)</b>	
7.	Annual global horizontal irradiation (kWh/m <sup>2</sup> )	1623.2
8.	Global irradiation incident on collector plane (kWh/m <sup>2</sup> )	1725.10
9.	Transposition factor	1.06
<b>10.</b>	<b>Losses</b>	
11.	Horizon Shading	0.00%
12.	Incident Irradiation Below Threshold	0.00%
13.	Near Shading	1.70%
14.	Incident angle	0.14%
15.	Soiling	2.00%
16.	Reflection on Front Side	-0.02%
17.	Gain from Bifaciality	-2.30%
18.	Low irradiance	-0.16%
19.	Module temperature	5.07%



SL#	Energy Yield Prediction for 20MW <sub>AC</sub> PV Plant	
20.	Electrical Shadings	0.11%
21.	Module quality	0.00%
22.	First Year Degradation	1.00%
23.	Module mismatch for front side irradiation	0.50%
24.	Module mismatch for rear side irradiation	0.22%
25.	DC ohmic	0.49%
26.	Inverter performance	1.18%
27.	AC ohmic	1.04%
28.	Inverter Transformer	2.11%
29.	Power Transformer	0.00%
30.	MV Cable Loss	1.12%
31.	Transmission line loss	0.00%
32.	Auxiliary Consumption 0.40	0.40%
33.	Plant + Grid Unavailability	1.00%
34.	Unused Energy (Grid Limitation)	1.28%
<b>35.</b>	<b>First Year P50 Energy Yield (MWh/annum)</b>	<b>42,221.12</b>
<b>36.</b>	<b>First Year Specific Yield (kWh/kWp)</b>	<b>1,455.15</b>

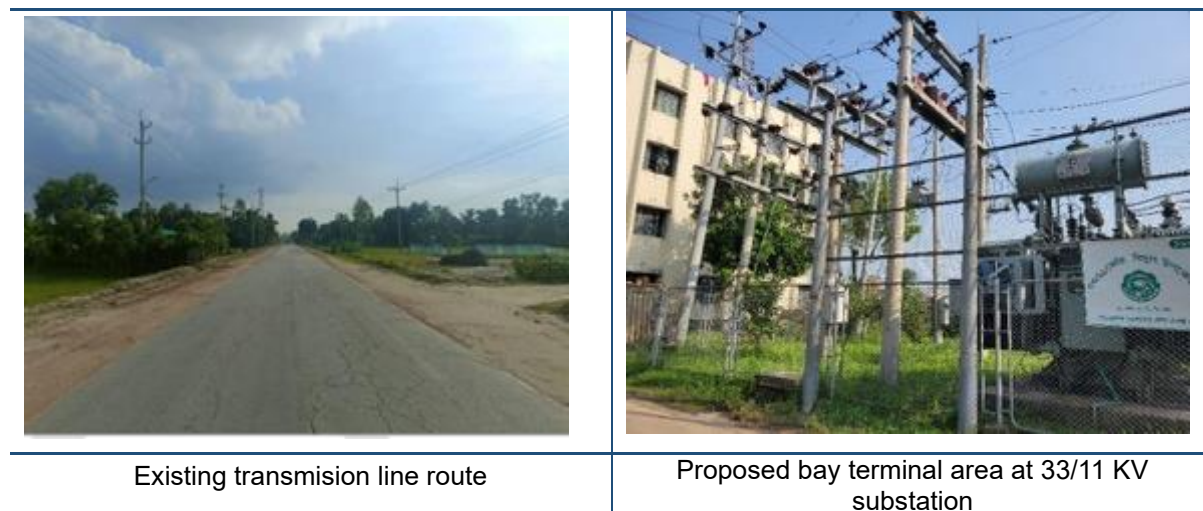
Source: Feasibility Report, May 2024

### 3.3.4 Power Evacuation and Transmission Line

The electricity generated by the Solar Power Plant will be transmitted to the current 33/11kV Muktagacha substation of BREB situated in Muktagacha, Mymensingh. The distance from the Muktagacha substation to the proposed solar PV plant is approximately 8 km, which is within the acceptable range for the 33kV voltage level considering the capacity of 20MW<sub>ac</sub>. Muktagacha 33/11kV substation is linked to the 132/33kV Mymensingh substation through the Muktagacha feeder, which is roughly 18km away (source: Feasibility Report, May 2024).

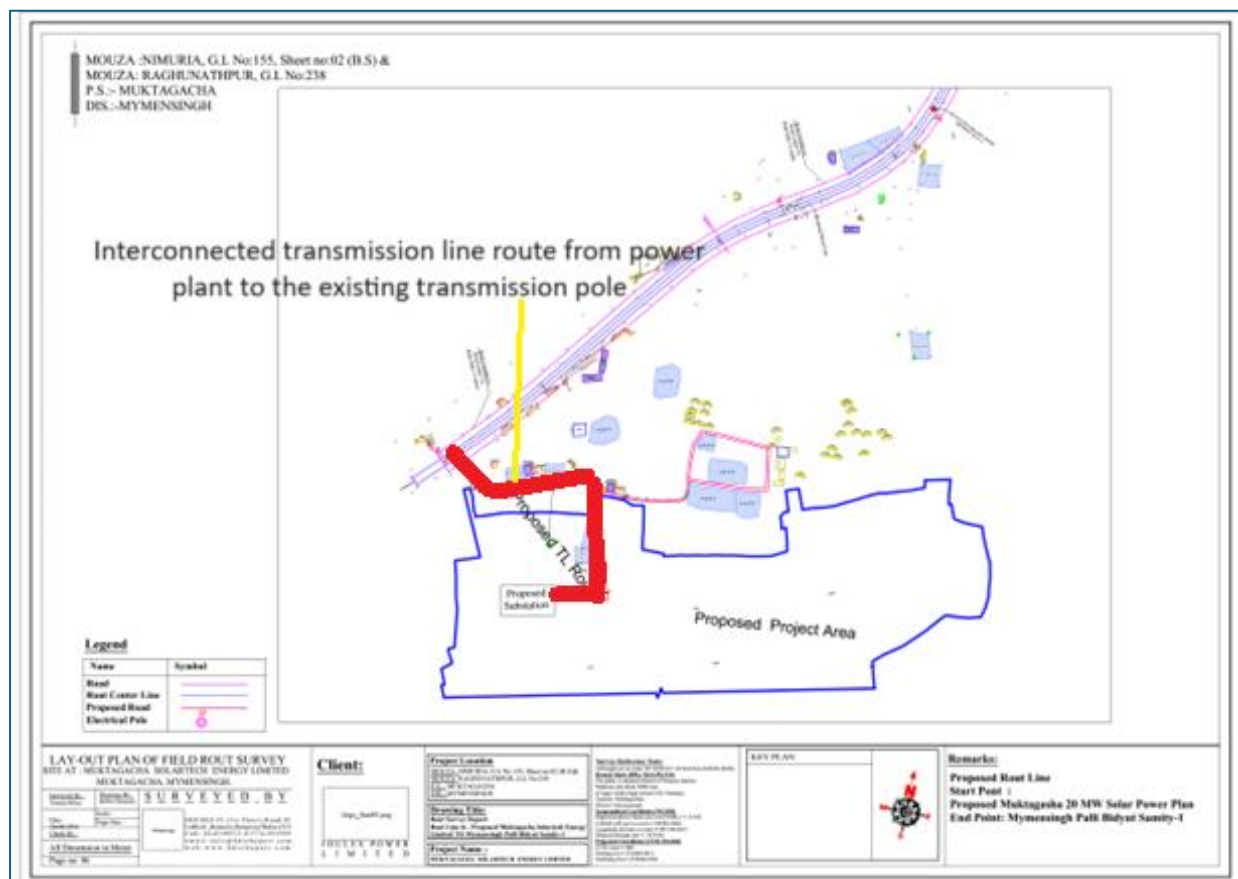
The power will be evacuated through AIS Insulated substation of solar power plant. Power will be transmitted via an overhead transmission line, following the established route originating from the Muktagacha substation (see **Error! Reference source not found.**). There is a total of 264 poles along this route. MSEL will install an interconnection transmission line. The distance between the interconnection transmission line to the existing pole is 200m (Figure 3-9). Two poles will be constructed to the access road of the solar power plant to establish this interconnection transmission line. As per MSEL, BREB will be responsible for installing these poles. Additionally, there is the possibility of constructing a new line bay in the switchyard of the Muktagacha 33/11KV Substation, REB is also responsible for this. MSEL is only stringing the transmission line from solar power plant to Muktagacha substation. **Error! Reference source not found.** shows the existing transmission line route and proposed bay terminal area.

**Figure 3-8: Existing Transmission Line Route and Proposed Bay Terminal Area at 33/11 KV Substation**



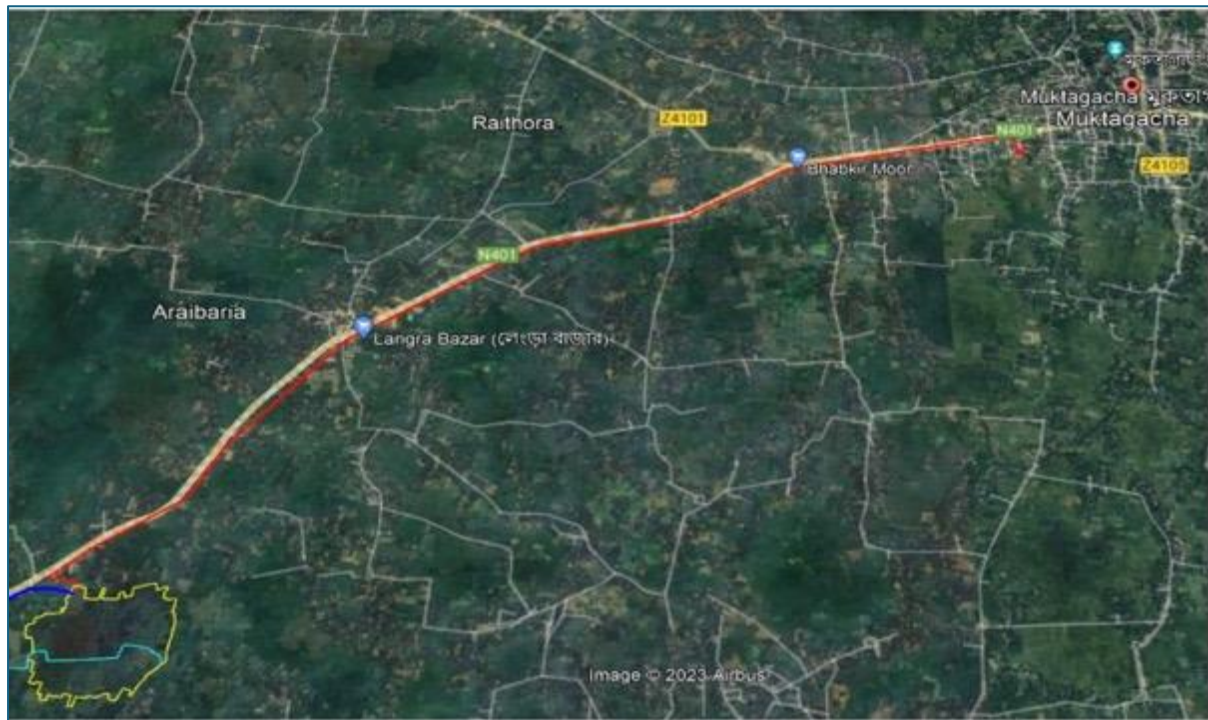
Source: EQMS Field Survey, May 2024

**Figure 3-9: Proposed Interconnected Transmission Line Route from Solar Power plant to Nearest Transmission Tower (200m)**



Source: MSEL, 2024

**Figure 3-10: Proposed Transmission Route from Solar Power Plant to the Muktagacha Substation**



Source: Feasibility Report, May 2024

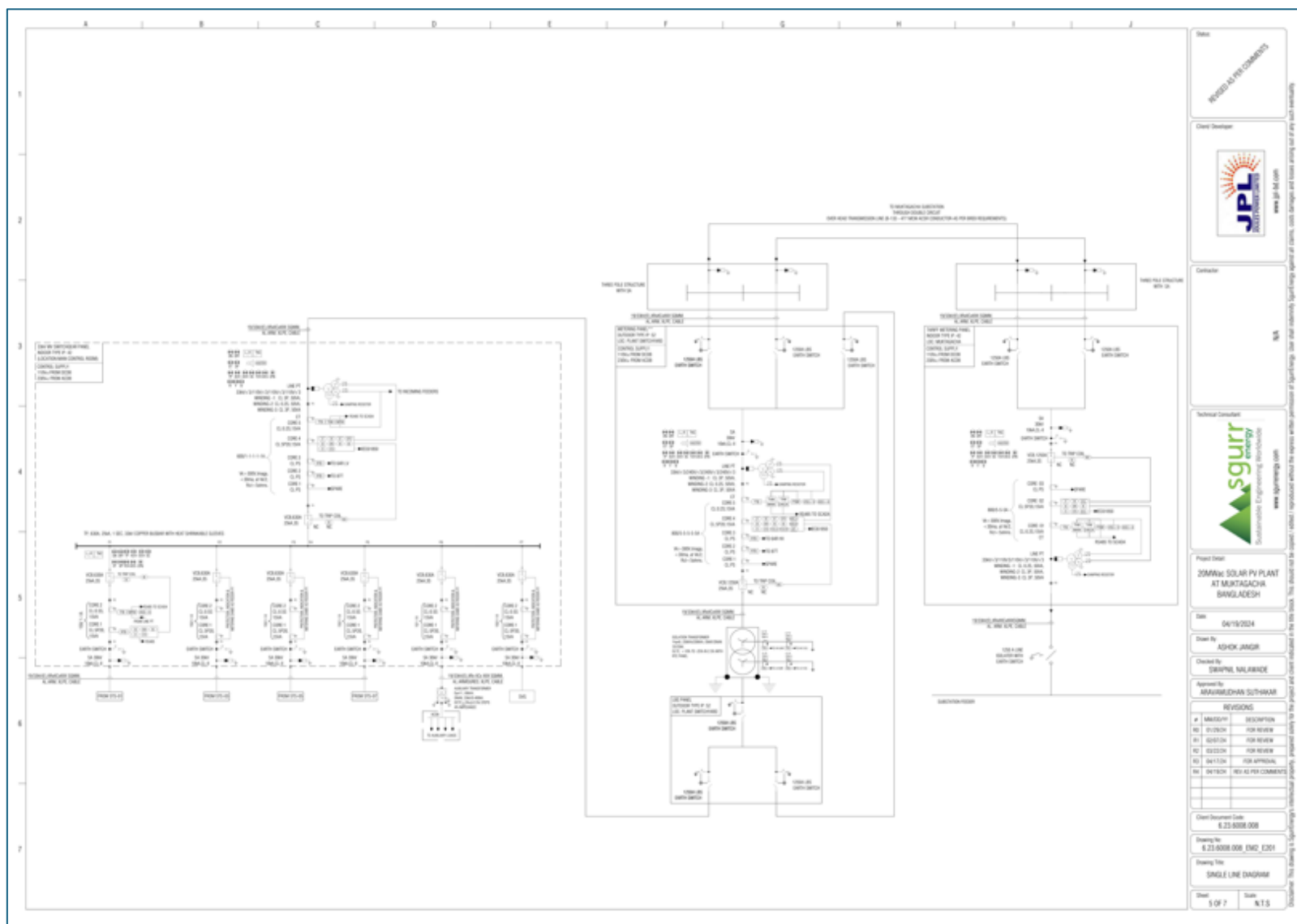
### 3.3.4.1 Power Evacuation Process

In a grid tied solar power plant, the produced electrical current (DC) by the PV cells is converted into usable electricity (AC) by a grid tied inverter. The AC current is then passed & stepped up through transformer to match with the specification of the grid to be fed.

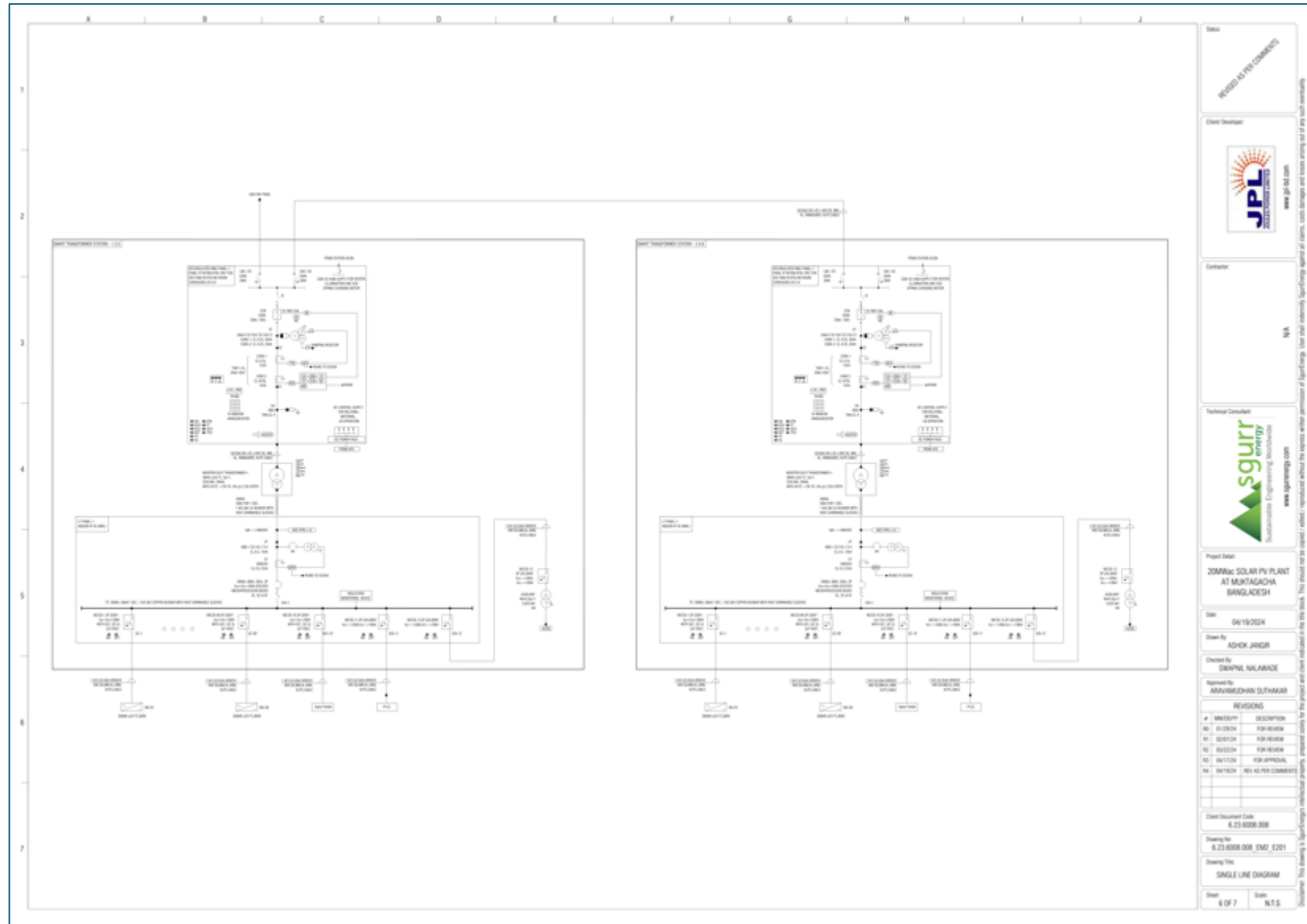
The output of inverters is 0.6kV at 50Hz AC which will be stepped up to 33KV through transformer (generally 0.6kV/33kV) and will be fed to station switchyard by underground cable. Then the power will be transmitted to nearby Muktagacha 33/11 kV substation at Muktagacha through 33 kV double circuit transmission line with Gross beak conductors. On completion, the proposed project will add 20 MW (AC) of electrical power to the national grid at STC. To measure the power generated from the proposed project, the energy meter will be installed at the interconnection point of 33 kV incoming line from the proposed project and 33 kV bus of BREB's Muktagacha 33/11 kV substation.

The electric power to be generated by the project will be evacuated through 33 kV bus of BREB's Muktagacha 33/11 kV substation by constructing necessary electrical interconnection facility i.e., 33 kV double circuit line (around 8km) and of 1 nos. of 33 kV bays at Muktagacha 33/11 kV Substation. Bays will allow for the isolation of individual circuits for incoming power from solar power plant to the 33 KV Muktagacha Substation. Figure 3-11 shows the single line diagram of the internal evacuation system.

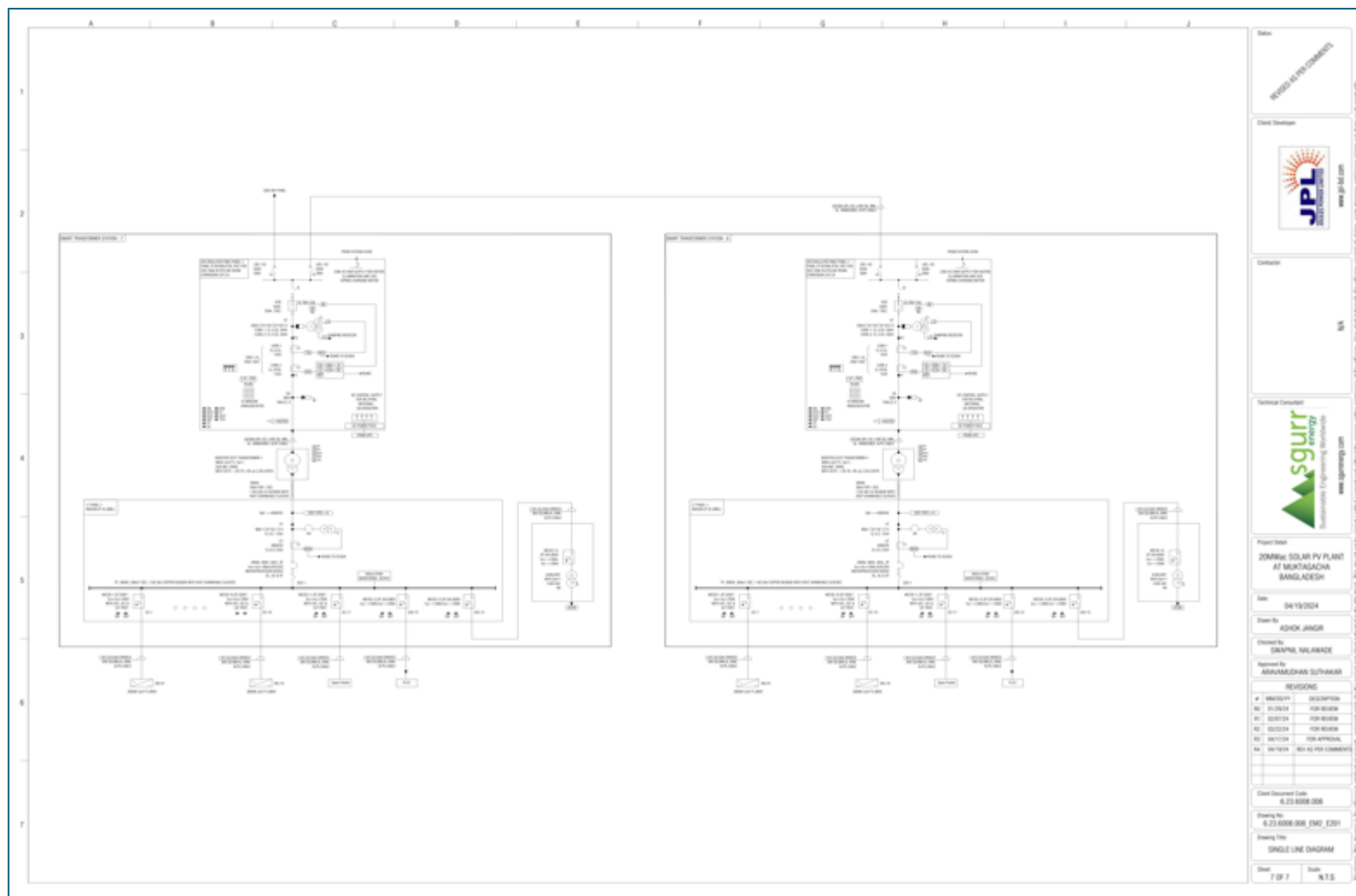
### Figure 3-11: Single Line Diagram



Draft Report  
Social Compliance Audit of Muktagacha Solartech Energy Limited at Muktagacha, Mymensingh



Draft Report  
Social Compliance Audit of Muktagacha Solartech Energy Limited at Muktagacha, Mymensingh



Source: MSEL, May 2024



## **4 SOCIO-ECONOMIC PROFILE OF THE STUDY AREA**

### **4.1 Socio-economic Environment**

Examining the existing socio-economic conditions of the residents in the project area will serve as a valuable benchmark for evaluating the potential socio-economic effects of proposed interventions. This analysis will facilitate a comparison of future changes and impacts resulting from the project interventions. Socio-economic characteristics encompass various aspects such as administrative structure, demographics, household size, education, occupation, housing, employment opportunities, and access to water and sanitation.

#### **4.1.1 Approach and Methodology**

For the purposes of establishing the socio-economic baseline for the project and undertaking the social impact assessment of the project, a phased participatory approach was adopted. Through this approach, an attempt was made to integrate the local understanding and perspective into the impact assessment process and identification of the mitigation measures. The purpose of such an approach was to allow for:

- The triangulation of the information available from secondary sources through the information made available by the local community, both qualitative and quantitative.
- Formulation of the socio-economic baseline based on a combination of primary and secondary qualitative and quantitative data.

An understanding to be developed of the local community's perception of the project and its activities and the possible impacts from the same and the desirable mitigation measures.

##### **4.1.1.1 Socio-economic Survey Methodology**

This section outlines the methodology developed for conducting a survey in the four unions named Mankon, Kashimpur, Basati and Ghoga of Muktagacha Upazila under Mymensingh district of Mymensingh division. The survey aimed to gather data on various socio-economic aspects within the community to better understand the socioeconomic profile of residents.

A simple random sampling technique was utilized to ensure a representative sample. With 33,693 households in the 2 km Area of Influence (AOI), a sample size of 271 (275 was selected as a round figure) was determined, achieving a 90% confidence level with a 5% margin of error. As discussed with the JPL, local people, landowners and the reconnaissance visit of the site it was identified that, most of the landowners are residing in the adjacent of the project area. Upon the consideration of the significance of landowners, 20% of total sample size (55) of landowners was surveyed to understand the socio-economic dynamics of landowners during the study period. The landowner survey was conducted through a purposive sampling method following a landowner list provided by MSEL.

On the other hand, the proposed project area is situated in two Unions named Kashimpur and Mankon. The nearest settlements are mostly in these areas. So, 60% of the rest of the survey will be conducted in these two unions and 40% will be conducted within the others. The socioeconomic survey was conducted for the respondents apart from landowners following the simple random sampling method.

The proposed project will produce electricity and supply it to the local substation of Mymensingh Palli Bidyut Samity. They will supply it through transmission line. The length of transmission line is 8 km and there is existing 274 poles in both side of the Tangail – Mymensingh highway road. The poles mainly owned by the Bangladesh Rural Electrification Board and no privately owned land is going to be acquired for the installment of transmission line poles.

A standard questionnaire was developed for Socioeconomic and landowner survey. The questionnaire covered various relevant topics, including demographics, income and expenditure, healthcare,

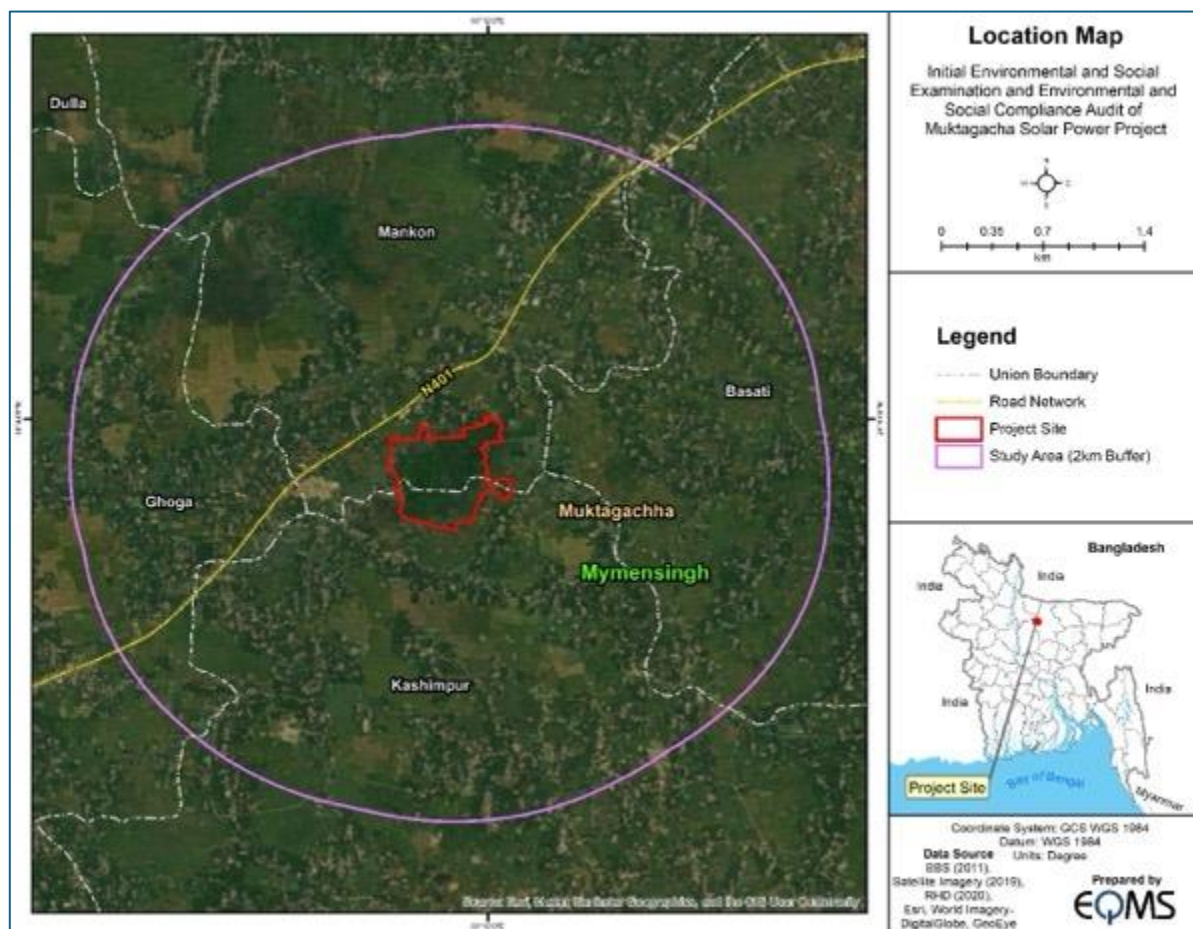


education, public utilities and facilities and so on, with attention given to cultural sensitivity and language clarity. Surveyors were trained extensively in questionnaire administration, informed consent, confidentiality, and accurate data recording. Door-to-door surveys were conducted within the surveyed area based on predetermined sampling.

#### 4.1.2 Study Area

A 2km area of influence has been selected to identify and assess the impact of the proposed project on the community. The project area falls under the union of Kashimpur and Mankon. The area of influence covers four unions named Basati, Ghoga, Kashimpur and Mankon under the District Muktagacha of Mymensingh. Below Figure 4-1 shows the study area.

**Figure 4-1: Study Area**



Source: EQMS, 2024

#### 4.1.3 Socioeconomic Profile of Landowners

The socioeconomic survey focuses on landowners, selecting 55 landowners at random for the study. These 55 landowners were chosen from the list of landowners provided by MESL.

##### 4.1.3.1 Demographic Profile

This survey focused on landowners in the study area. A total number of 216 population are living in 55 households that has been surveyed for socio economic study. Among these households, 53 were headed by males, and 2 were led by females. The average household size is 3.92 which is lower than

the national average (4.0)<sup>2</sup>. Below Table 4-1 shows the Demographic Information of the Project Area of Influence.

**Table 4-1: Demographic Information of the Landowners**

HH	Male HH	Female HH	Male		Female		Total pop.	HH size
			Pop.	%	Pop.	%		
55	53	2	114	52.8	102	47.2	216	3.92

Source: EQMS Land-owner Survey, March 2024

Among the surveyed landowners, about 52.8% males and 47.2% females were identified. In the case of age distribution of the surveyed populations, the majority (26.4%) of the population are concentrated below 14 years and about 18.1% are between 31 to 40 years of age. About 17.6% are between 21 to 30 years of age while the elderly population (more than 65+) is about 6%.

Moreover, 57.9% of the total population are found married while 36.6% of them are unmarried during survey of the study area. A total of 5.6% identified as widow/widower and divorced.

All over, health status among the households has been found quite well. Around 96.3% of the population are found physically normal, only 3.7% are found physically challenged. Table 4-2 shows the Demographic Profile of the study area.

**Table 4-2: Profile- Age, Marital Status and Health Status of the Study Area**

S/N	Demographic Information		Land-owners	
			No	%
1	Population	Male	114	52.8
		Female	102	47.2
		Total	216	100.0
2	Age	Below 14	57	26.4
		15 to 18	17	7.9
		19 to 20	6	2.8
		21 to 30	38	17.6
		31 to 40	39	18.1
		41 to 50	27	12.5
		51 to 65	19	8.8
		Above 65 years	13	6.0
		Total	216	100.0
3	Marital Status	Married	125	57.9
		Unmarried	79	36.6
		Widow/Widower	11	5.1
		Divorced	1	0.5
		Total	216	100.0
4	Health Status	No Disability or incurable diseases	208	96.3
		Person with Disabilities	8	3.7
		Total	216	100.0

Source: EQMS land-owner Survey, April 2024

<sup>2</sup> Population and Housing Census 2022 – Preliminary Report

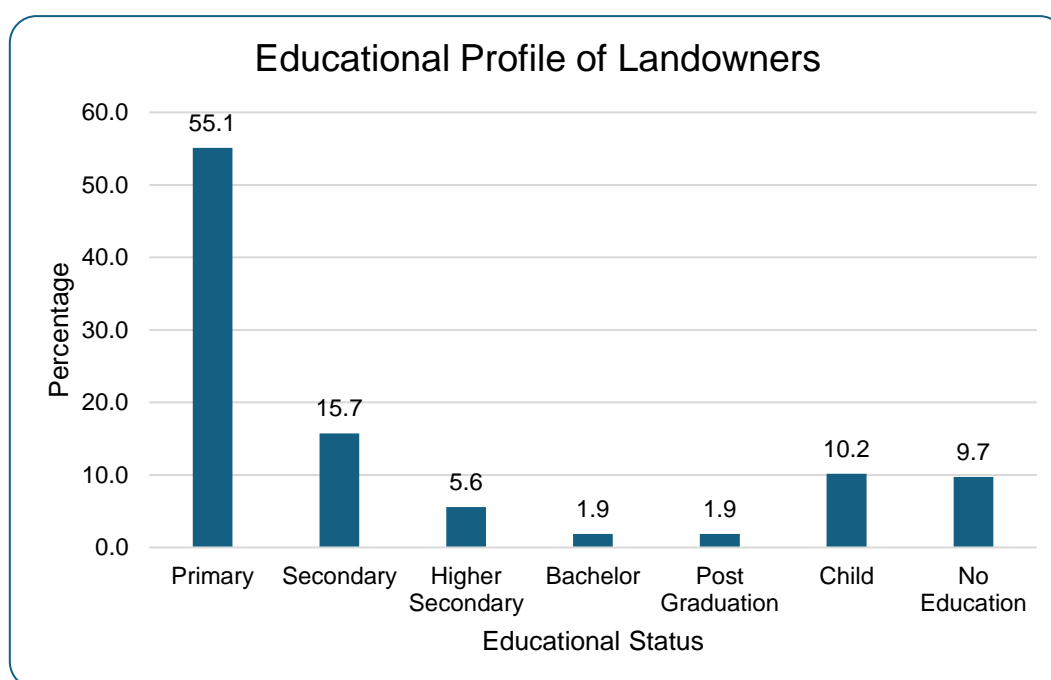
#### 4.1.3.2 Religious Affiliation

Based on the outcomes of the landowner survey, it is found that the study area is Muslim dominated, with the entire surveyed households identified as followers of the Islamic faith.

#### 4.1.3.3 Educational Status

According to landowner survey, the majority of the (55.1%) population of the surveyed households of landowners had access to primary level education. A considerable proportion of the population (15.7%) completed secondary school. While only 5.6% of the population had access to higher secondary education. According to survey results, the illiteracy rate is 9.7%. The total literacy rate of the surveyed landowners is 80.1% which is higher than the national literacy rate (74.7%) of Bangladesh. Children account for approximately 10.2% of the population. Below Figure 4-2 depicts the education profile of the surveyed people of area of influence of the proposed project.

**Figure 4-2: Education Profile of the Landowners**



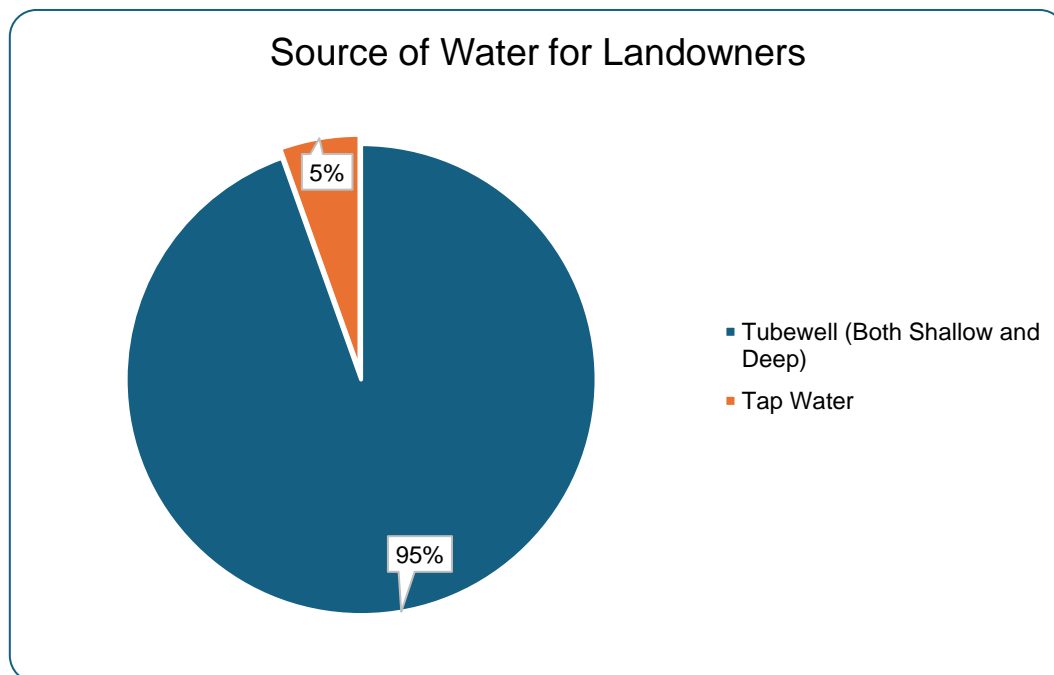
Source: EQMS Landowner Survey, April 2024

#### 4.1.3.4 Public Utilities

##### 4.1.3.4.1 Access to Water

During the landowner survey, it was found that, 94.5% landowners source water from both Shallow and deep tubewell. Only 5.5% of the household collects tap water. Below Figure 4-3 shows the status of study area's access to safe water.

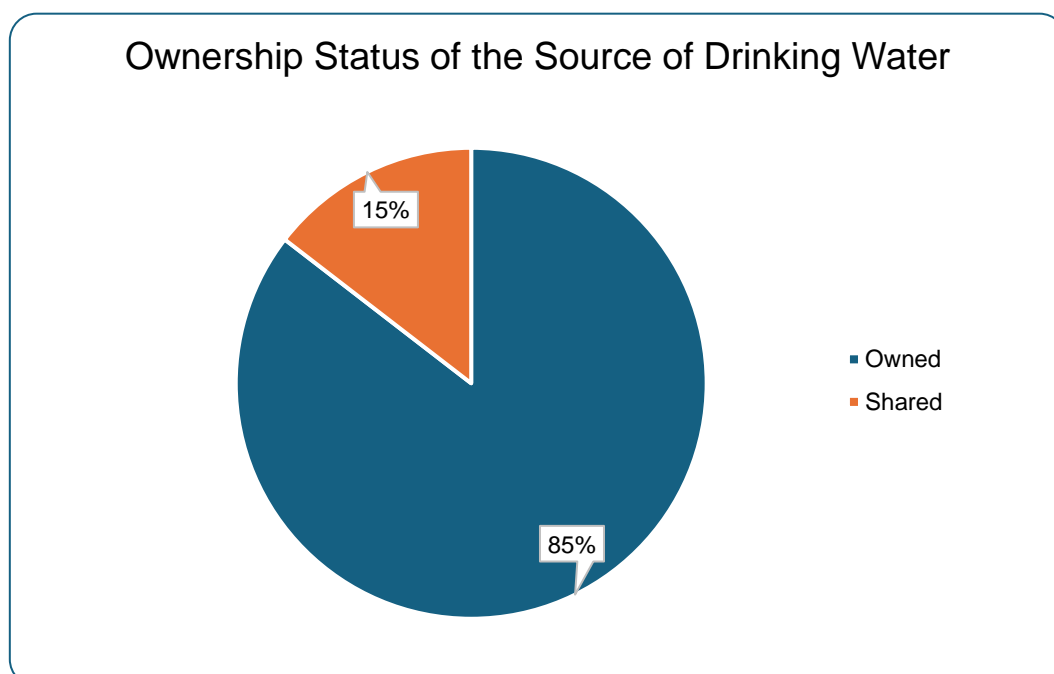
**Figure 4-3: Source of Water for Landowners**



Source: EQMS Landowner Survey, April 2024

Most of the Landowners (85%) collect water from their own drinking water source, whereas only 15% collect water from different shared water sources. Below Figure 4-4 shows the Ownership Status of the Source of Drinking Water for the surveyed landowners.

**Figure 4-4: Ownership Status of the Source of Drinking Water**

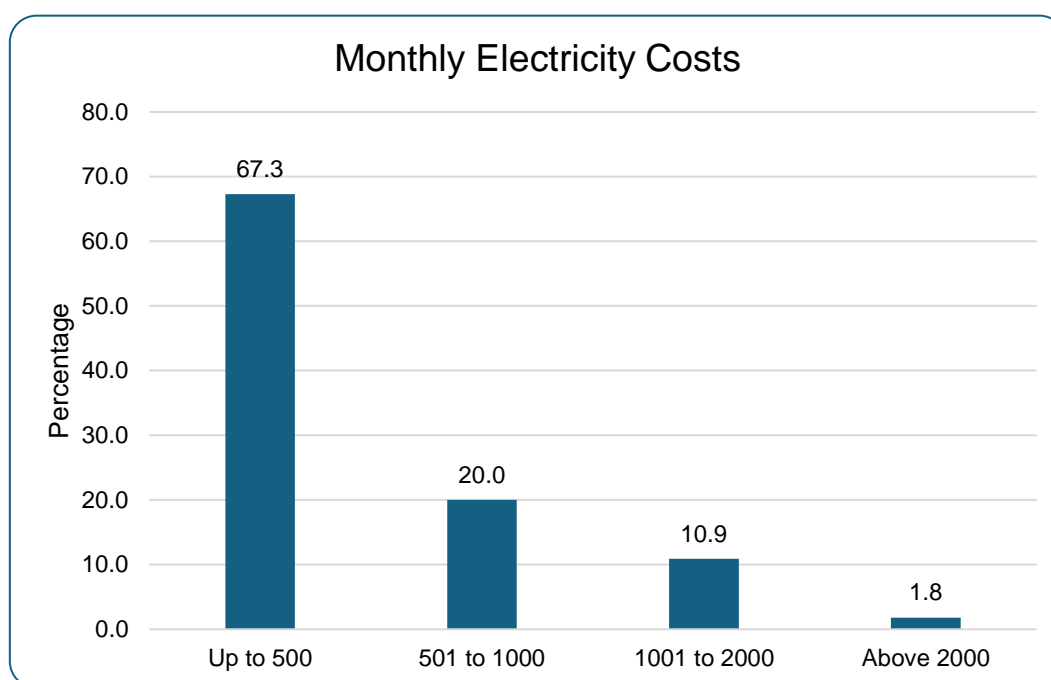


Source: EQMS Landowner Survey, April 2024

#### 4.1.3.4.2 Access to Electricity and Monthly Electricity Costs

The landowner survey results found that all of the surveyed households have access to electricity from the grid. Most of the surveyed households (67.3%) of the landowners spend up to BDT 500 per month and 20% has to spend within BDT 500 to 1000 per month. Only 1.8% of the households spend above BDT 2000 per month as their electricity cost. Below Figure 4-5 shows the overview of monthly electricity cost for the landowners.

**Figure 4-5: Monthly Electricity Cost for the Landowners**

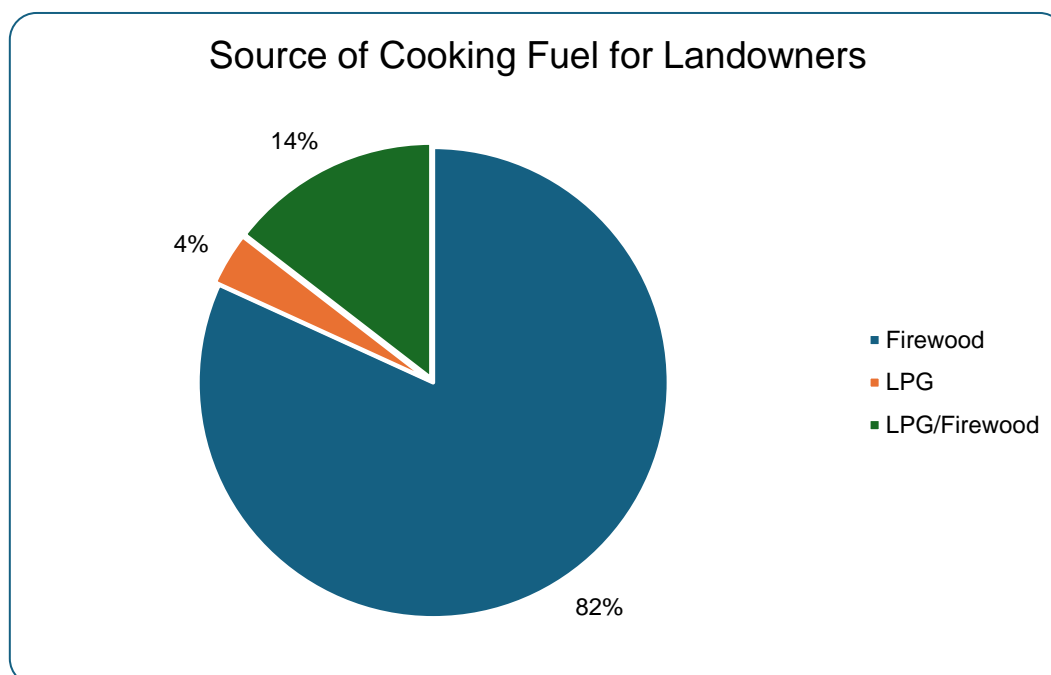


Source: EQMS Landowner Survey, April 2024

#### 4.1.3.4.3 Source of Cooking Fuel and Monthly Fuel Cost

The surveyed data outlines the diverse cooking fuel preferences within the surveyed landowners of the proposed project. Firewood, a traditional fuel, is still widely used by 81.8% of landowners. Only 3.6% use LPG and 14.5% of households use both LPG gas and firewood for cooking purposes. They usually purchase the firewood from their local market. Source of cooking fuel for landowners is presented hereunder Figure 4-6.

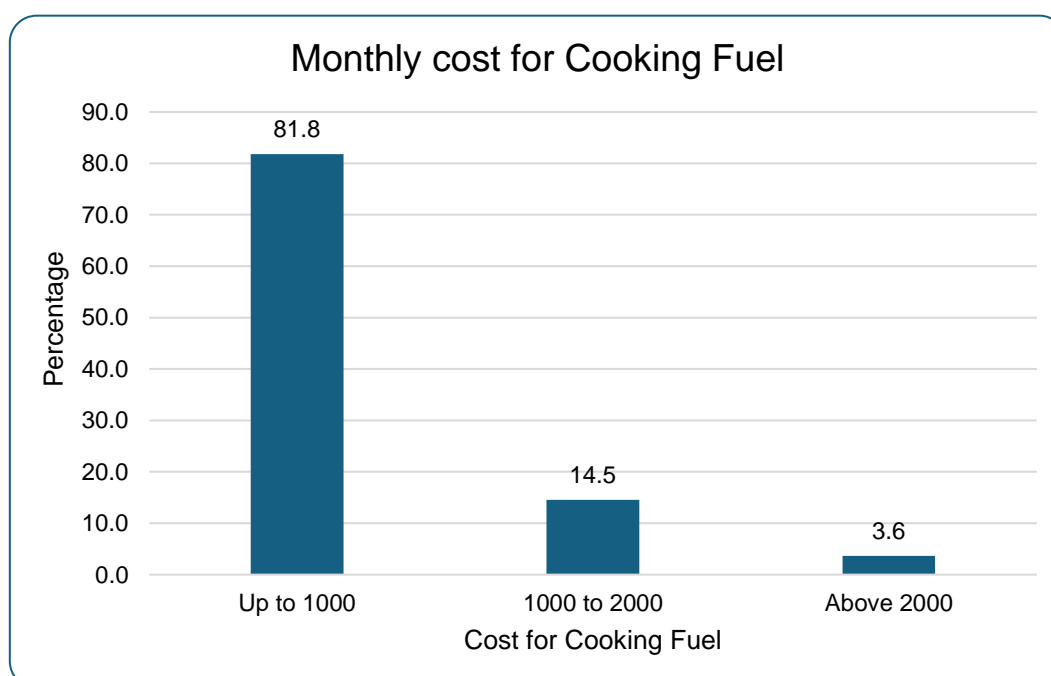
**Figure 4-6: Source of Cooking Fuel for Landowners**



Source: EQMS Landowner Survey, April 2024

Around 81.8% of landowners have to spend up to 1000 BDT per month for fuel cost. On the other hand, 14.5% of the households spend between BDT 1000 to 2000 per month and only 3.6% spend above BDT 2000 per month on their cooking fuel cost. Below Figure 4-7 shows the cooking fuel cost of the households of surveyed landowners.

**Figure 4-7: Monthly Cooking Fuel Cost for the Landowners**

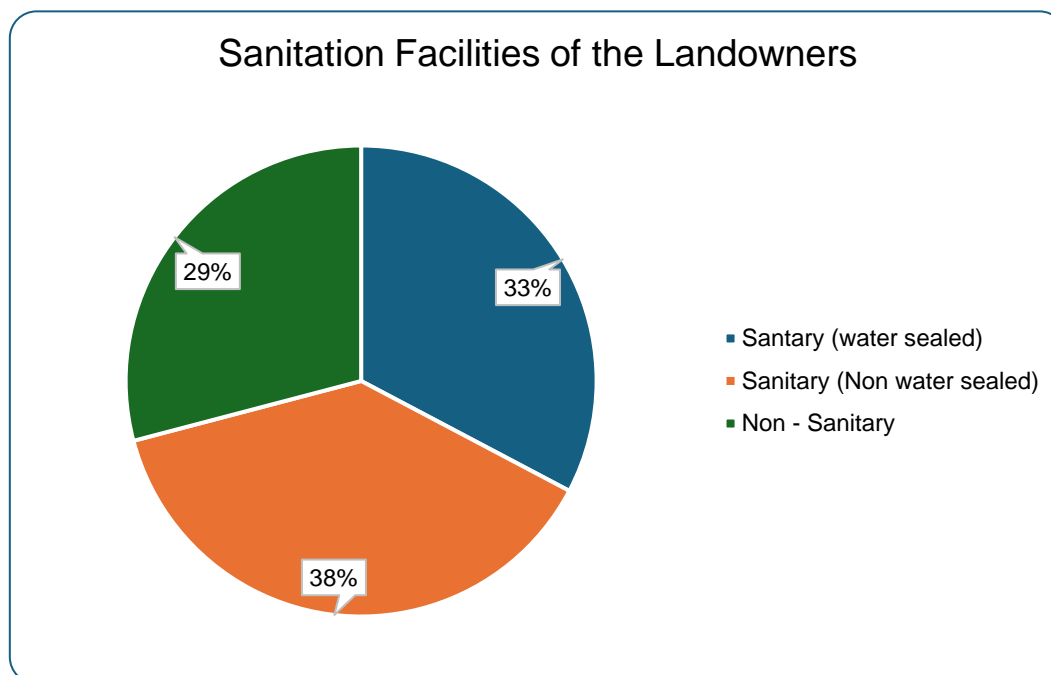


Source: EQMS Landowner Survey, April 2024

#### 4.1.3.4.4 Sanitation Facility

Primary survey results demonstrate that 38% of households of the landowners are using sanitary latrine (non-water sealed) and 33% are using water-sealed sanitary latrine. Around 29% of the surveyed landowner households use non sanitary latrine. Available sanitation facilities available for the landowners is presented in below Figure 4-8.

Figure 4-8: Sanitation Facilities of the Landowners



Source: EQMS Landowner Survey, April 2024

#### 4.1.3.5 Access to Social Institution for the Surveyed Landowners

Convenient and easy access to educational institutions, market and medical services help households to get basic needs and health services when it is necessary or urgent. Distance may create a barrier from easy access to these services which ultimately leads to poor livelihood status. On the contrary, easy access to social services leads to better livelihood and development.

##### 4.1.3.5.1 Access to Educational Institutions

Table 4-3 shows the educational institution accessibility for the landowners. Study finds that 76.4% of total students has to travel up to 1 km for receiving elementary/basic education whereas 21.8% of the students has to travel around 1 to 3 km for receiving the same opportunity. On the other hand, 76.4% of the students has to travel up to 1 km to receive Higher secondary degrees. Conversely, 23.6% of the students have to travel 1 to 3 km. For receiving Bachelor/ post-graduation degree, 63.6% of the students need to travel around 1 to 3 km, whereas 34.5% of the students travel up to 1 km and only 1.8% travel more than 3 km.

On average, 62.4% of the total students have to move up to 1 km for receiving educational facilities whereas 36.4% have to move 1 to 3 km and only 1.2% have to move above 3 km for the purpose of education.



**Table 4-3: Access to Education**

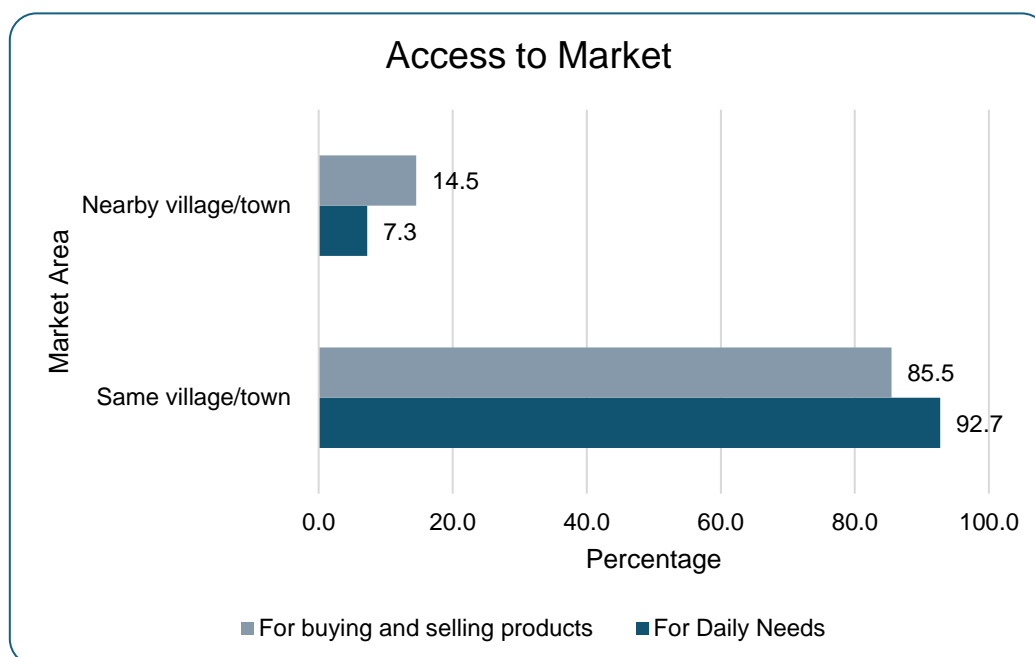
Distance	Elementary/ Basic Education	Higher Secondary	Bachelor/ Post Graduation	Total
Up to 1km	76.4	76.4	34.5	62.4
1 to 3 km	21.8	23.6	63.6	36.4
Above 3 km	1.8	0.0	1.8	1.2

Source: EQMS Landowner Survey, April 2024

#### 4.1.3.5.2 Access to Market

Survey results have found that 92.7% of the surveyed landowners go to the markets of their own town to buy daily need items whereas only 7.3% of the surveyed landowners go to the markets of nearby towns for the same purpose. On the other hand, 85.5% of the surveyed landowners usually go to the markets of their own town and only 14.5% go to other towns for buying and selling products. Below Figure 4-9 shows the accessible market facilities for the landowners.

**Figure 4-9: Access to Market Facilities for the Landowners**



Source: EQMS Landowner Survey, April 2024

Survey results have also found that 89.1% of the surveyed landowners have to move up to 1 km for buying daily needs whereas only 10.9% need to go more than 1 km for the same purpose. On the other hand, 76.4% of the total surveyed landowners have to move up to 1 km for buying and selling products. Conversely, 23.6% have to move more than 1 km for the same purpose. Below Table 4-4 shows the distance to the market facilities for the surveyed landowners.

**Table 4-4: Distance to Market for landowners**

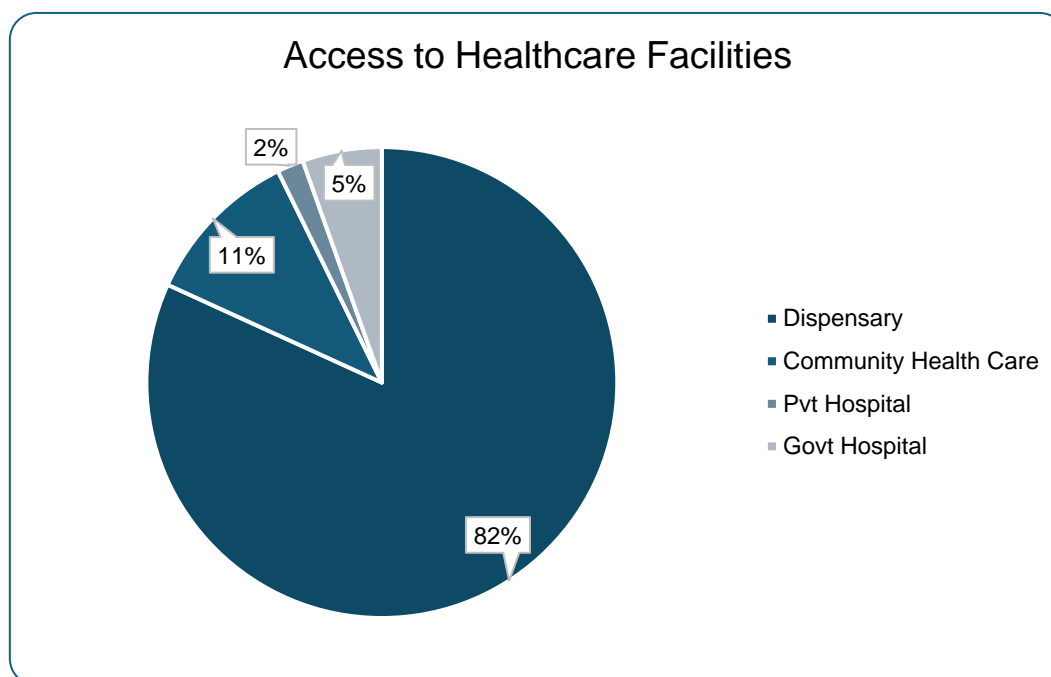
Distance	For Daily Needs (%)	For Buying and Selling Products (%)
Up to 1km	89.1	76.4
More than 1 km	10.9	23.6
Total	100.0	100.0

Source: EQMS landowner Survey, April 2024

#### 4.1.3.5.3 Access to Healthcare Facilities

Easy access to hospitals enhances the frequency of health services taking. Higher distance may hinder taking health services which ultimately increase the health risk. Survey results have found that 82% of the surveyed landowners go to their nearest dispensary for their general healthcare services, whereas the rest of the households go to community health care center (10.9%), Private hospital (1.8%) and government hospital (5.5%) for the same purpose. Below Figure 4-10 shows the access to healthcare facilities for the surveyed households of the Landowners.

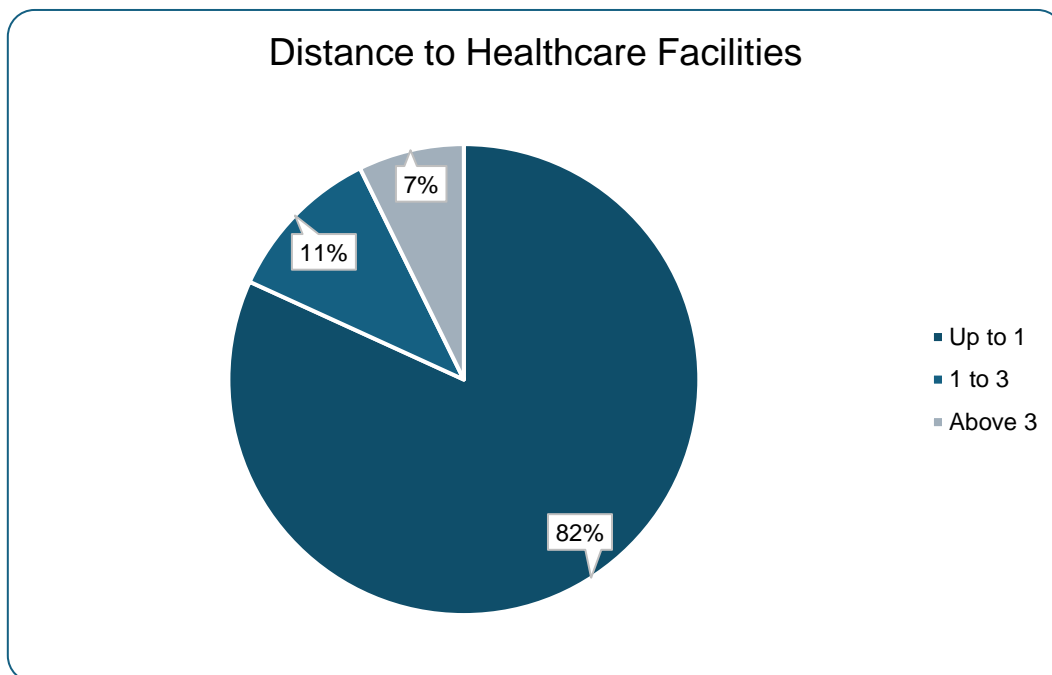
**Figure 4-10: Access to Healthcare Facilities for the Landowners**



Source: EQMS Landowner Survey, April 2024

Out of the surveyed households of landowners, around 82% of households are staying within 1 km distance from the health service point. On the other hand, only 11% live within 1 to 3 km distance and the rest 7% live 3 km far from the hospital services. Below Figure 4-11 shows the distance to the healthcare facilities from the surveyed households of surveyed landowners.

**Figure 4-11: Distance to Healthcare Services**



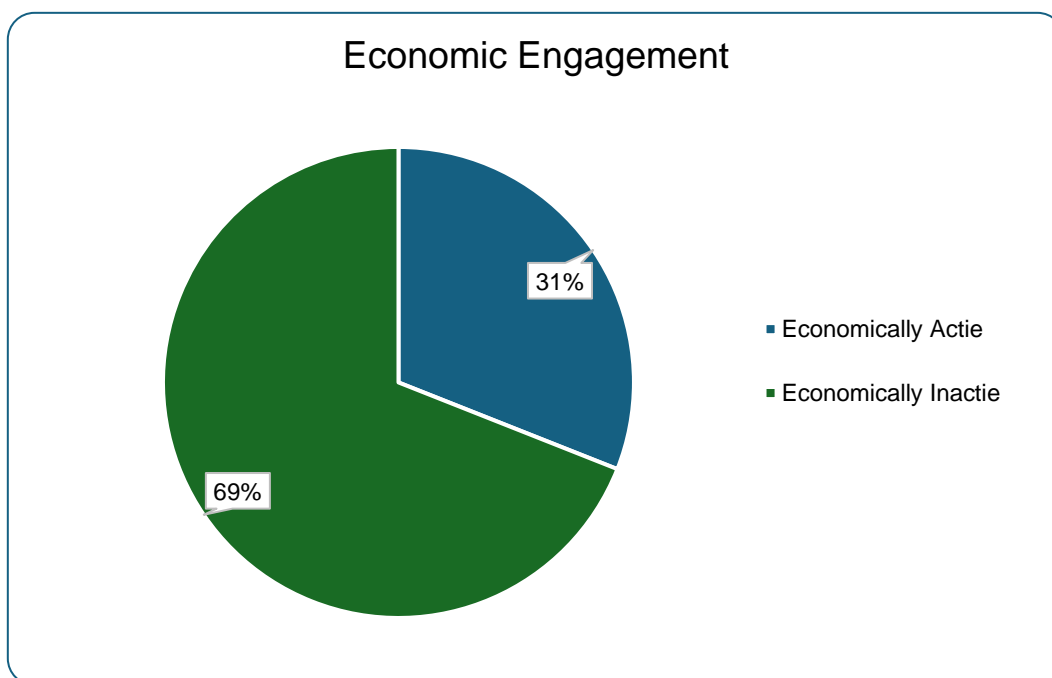
Source: EQMS Landowner Survey, April 2024

#### **4.1.3.6 Economy and Employment**

##### **4.1.3.6.1 Economic Engagement of the Surveyed Landowners**

In the study area, only 31% of the total surveyed population is involved in economic activities through various occupations. On the contrary, 69% of those polled are economically inactive. Figure 4-12 depicted the economic engagement of project area of influence.

**Figure 4-12: Economic Engagement of Landowners**



Source: EQMS Landowner Survey, April 2024

#### **4.1.3.6.2 Occupation Profile of the Surveyed Households of the Landowners**

According to the survey findings of the landowners, majority of the economically active male (53.7%) are engaged in farming activities, while the lowest number of people are teachers (1.5%). Conversely, only a few numbers of women (11.9%) are economically active who are involved in farming (4.5%), daily laboring (4.5%), service (1.5%) and teaching (1.5%) activities. The landowners used to engage in farming activities on the project land, on their other lands or on land owned by others.

The survey conducted with the landowners indicates that 69% of the population is economically inactive, attributed to various reasons. This includes 22.1% of males being students and 43% of females working as housewives. A detail of economically active and inactive populations according to their field of engagement is presented in Table 4-5.

Table 4-5: Economically Active and Inactive Populations Occupation Profile

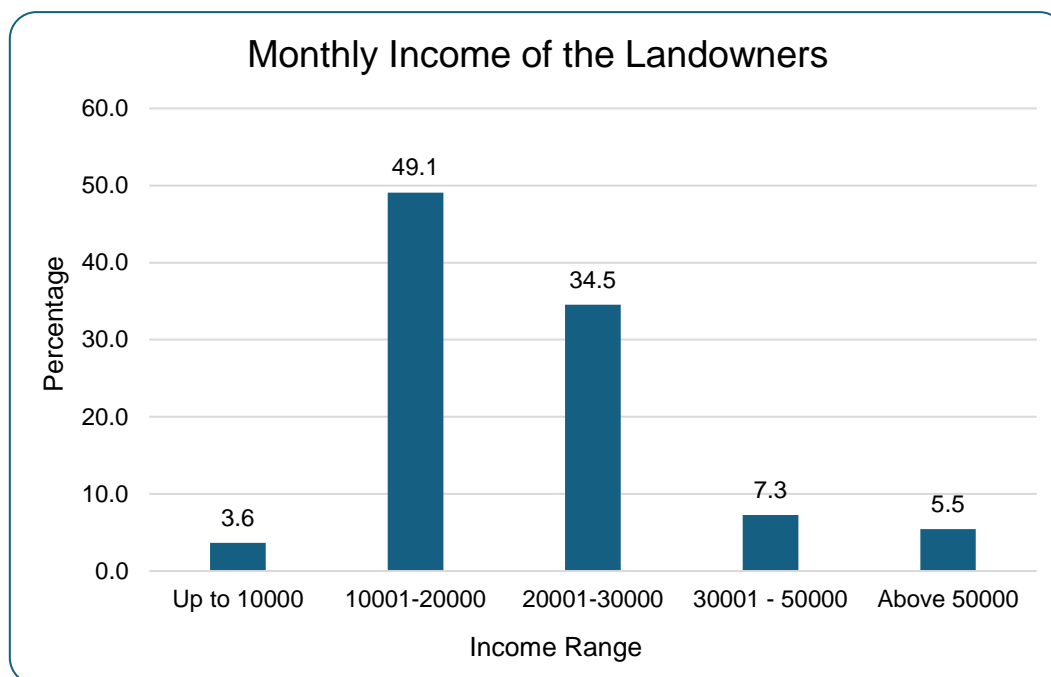
Employment Status	Field of Engagement	Male		Female		Total	
		Number	%	Number	%	Number	%
Economically Active	Farming	36	53.7	3	4.5	39	58.2
	Agricultural Labor	2	3.0	0	0.0	2	3.0
	Daily Labor	0	0.0	3	4.5	3	4.5
	Service	6	9.0	1	1.5	7	10.4
	Commercial business, Shops etc.	14	20.9	0	0.0	14	20.9
	Teacher	1	1.5	1	1.5	2	3.0
<b>Sub-total</b>		<b>59</b>	<b>88.1</b>	<b>8</b>	<b>11.9</b>	<b>67</b>	<b>100.0</b>
Economically Inactive	Student	33	22.1	20	13.4	53	35.6
	Unemployed/ Job Seeker	1	0.7	0	0.0	1	0.7
	Unpaid Family work/Housewife	0	0.0	64	43.0	64	43.0
	Child and Elderly	21	14.1	10	6.7	31	20.8
<b>Sub-total</b>		<b>55</b>	<b>36.9</b>	<b>94</b>	<b>63.1</b>	<b>149</b>	<b>100.0</b>

Source: EQMS Landowner Survey, April 2024

#### 4.1.3.6.3 Monthly Income

According to the socioeconomic survey, it is found that most (49.1%) of the household's income range is from 10000 to 20000 BDT. The monthly income of the HHs of surveyed landowners is given in below Figure 4-13.

Figure 4-13: Monthly Income of the Landowners



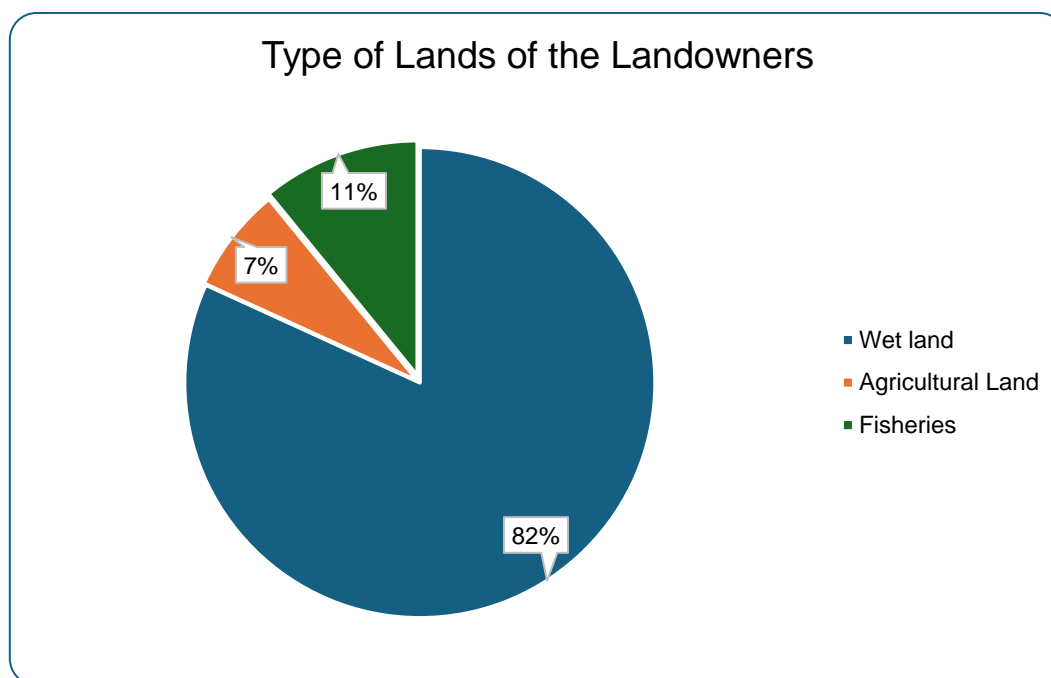
Source: EQMS Landowner Survey, April 2024

#### 4.1.3.7 Information about the Landowners

##### 4.1.3.7.1 Type of Project Land

During the study period, 55 landowners were surveyed to understand the social dynamics of the landowners as well as their present condition. Out of the surveyed landowners, 82% had their land inundated in wet land (beel). On the other hand, only 11% of the landowners used their land for fisheries purposes and 7% used their land for agriculture purposes. Below Figure 4-14 shows the type of land as per the landowners.

Figure 4-14: Type of Project Land



Source: EQMS Landowner Survey, April 2024

#### 4.1.3.7.1.1 Type of Agricultural Land

During the landowner survey, it was found that, the agricultural lands taken by the proposed project were single cropped lands. These lands were cultivated for 3 to 4 months of a year. Mainly the farmers produce Aman<sup>3</sup> paddy in these lands.

#### 4.1.3.7.1.2 Type of Fisheries Land

During the landowner survey, it was found that a few amounts of land was used for fish farming in the proposed project site. The landowners used to harvest fish on these farms for all over the year. Usually *rui*, *katla*, *tilapia*, *catfish* are the most common fish harvested in these farms.

#### 4.1.3.7.2 Information about the Land dependents

During the landowner survey, no person was found who is fully dependent on these lands. All the landowners usually have engaged in other income generating activities. The land laborers, working in the agricultural lands, are appointed seasonally on daily basis contract. They also work on other lands, or any other income generating activities during the dull seasons. There were approximately 40 to 50 land laborers who usually worked on these lands. These agricultural laborers were usually hired for a single season on daily basis contract (BDT 800 to 900 per day). Moreover, the agricultural laborers are mostly hired from other villages. As a result, no land labors are fully dependent on cultivating in the project land. They are also involved in different income generating activities such as small business, daily laboring, driving and so on. As a result, the land procurement process did not have a significant financial impact on the land laborers. Those who took these lands for lease from the landowners before the project, are mostly moved to Dhaka or other cities for better livelihood options. There were no lessors who found themselves with reduced income due to the change in land use. For the fish farms, each landowner appoints approximately 10 to 15 laborers for one time during the starting and ending period of cultivation. These labors are appointed for around one month and they usually work around

<sup>3</sup> Aman is one of the major cereal crops of Bangladesh. The paddy which is harvested in the month of November and December is said to be Aman paddy.



two to three hours a day in these fish farms during their contract period. Since these laborers were hired for a short period, they took on this work temporarily and as a secondary income source. Each of them has a primary income from sources such as small businesses, daily labor, driving, or farming. This indicates that while the temporary job added to their income, their primary financial stability relies on their main jobs, resulting in only a slight decrease in their overall income.

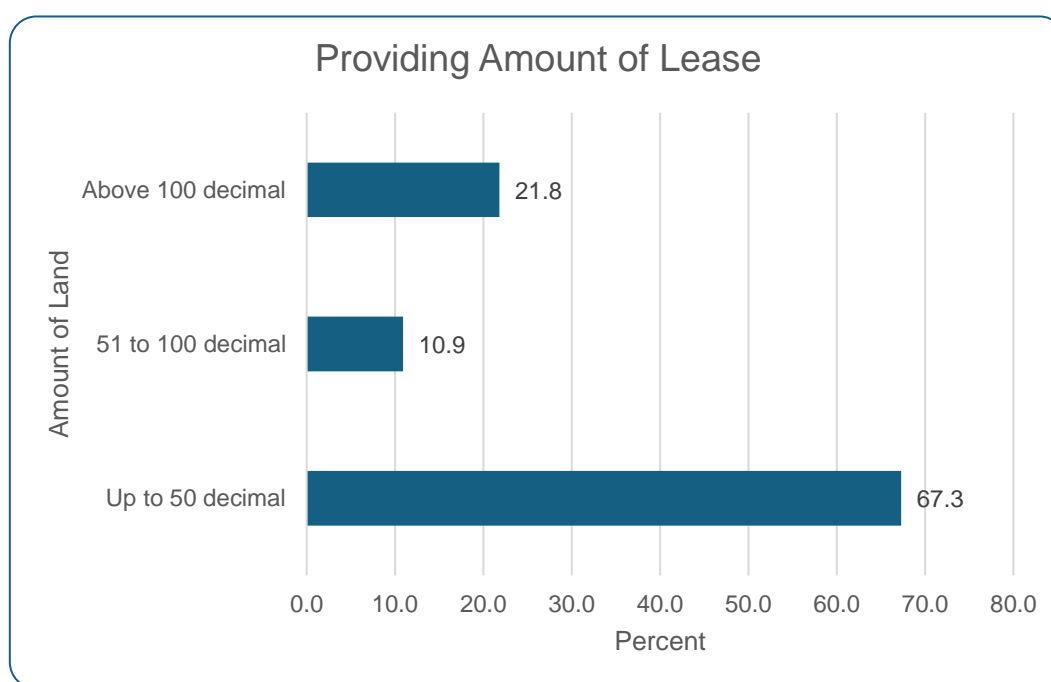
#### **4.1.3.7.3 Information about the Remaining Land of the Landowner**

During the landowner survey, it was found that all the landowners have other land remaining after giving lease for the proposed project. All of the landowners have their homestead lands. Besides, they also have agricultural and fishing lands. 71% of the affected landowners have up to 0.20 acres (20 decimals) of land, whereas 29% of the affected landowners have above 0.20 acres (20 decimal of land). In this regard, the smallest land size is 6.5 decimals.

#### **4.1.3.7.4 Providing Amount of Land Lease to Project**

Below Figure 4-15 shows the amount of land providing to the project by the landowners through lease. Around 67.3% of the landowners provided up to 50 decimals of land to the proposed project whereas 21.8% provided above 100 decimals of land. Most of these lands were owned by the landowners (94.5%) through inherited, whereas only 5.5% of the landowners owned the land by purchased.

**Figure 4-15: Providing Amount of Lease to Project**



Source: EQMS Landowner Survey, April 2024

#### **4.1.3.8 Overview of Payment**

##### **4.1.3.8.1 Land Purchasing Process**

According to MSEL, initially their primary objective was to lease all the land. They approached the landowners with leasing proposals in July 2022. However, some owners, due to family issues, preferred to sell their land instead and informed MSEL by July 2023. With no other option, MSEL agreed to purchase the land. The landowners proposed prices for their land, and MSEL determined the land value by verifying local market rates and the mouza rate at the sub-register office.

MSEL then started to collect land documents from the respective landowners from September 2023. To verify the exact landowners, they also gathered documents from the government land office. These

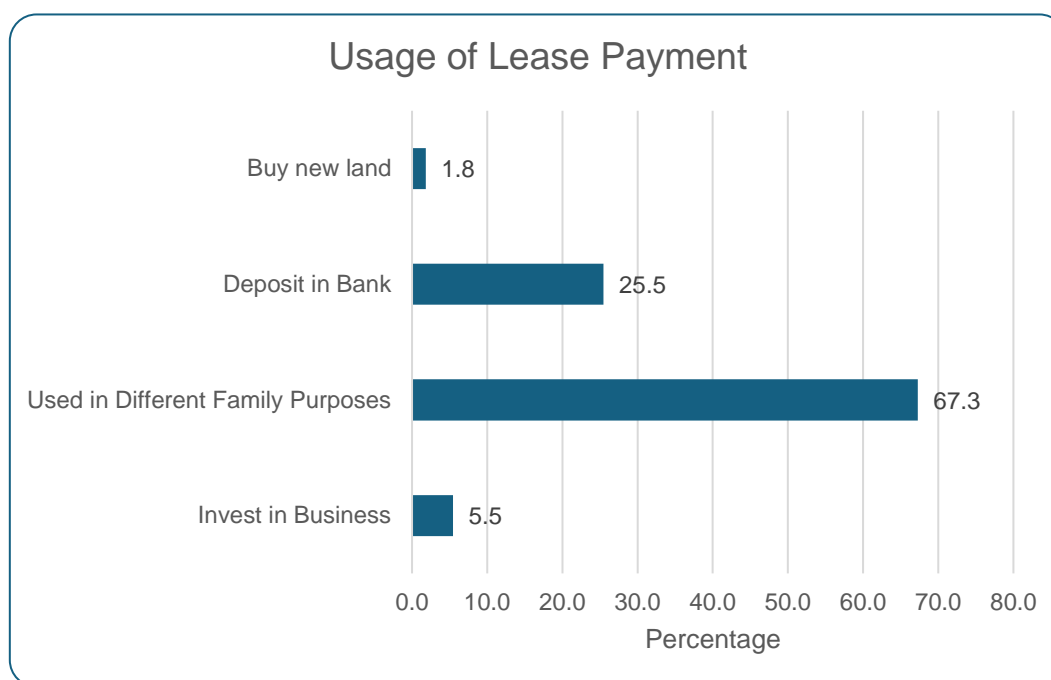
documents were shared with their legal adviser, who vetted them the documents by October 2023. After completing all the necessary paperwork, MSEL purchased the land through a registered agreement with the landowners, making the payments accordingly by May 2024. MSEL disbursed the land payment through both cash and bank transfer, according to the convenience of the landowners MSEL covered all costs associated with the land registration process.

#### 4.1.3.8.2 Details about Payments Status

**4.1.3.8.3 As per the landowner survey, all the landowners had received their land lease payments (BDT 2,765,725 for the year 2023 - 2024) through cash. They had received partial amount of payment. As per their contact with the project authorities, they will get yearly payment for their land. The land lease amount is yearly BDT 462 per decimal, and they will get an additional 10% after each 5 years. Additionally, some of the landowners who redeveloped their land for fish farming received compensation from MSEL.**

**Usage of Land Lease Payment**  
The landowners used the money received from leasing their land for different purposes such as using it for different family purposes (67.3%), deposit in bank (25.5%), invest in business (5.5%) and buying new land parcel (1.8%). Figure 4-16 shows the details about the usage of the land selling price.

**Figure 4-16: Usage of Land Lease Payment**



Source: EQMS Landowner Survey, April 2024

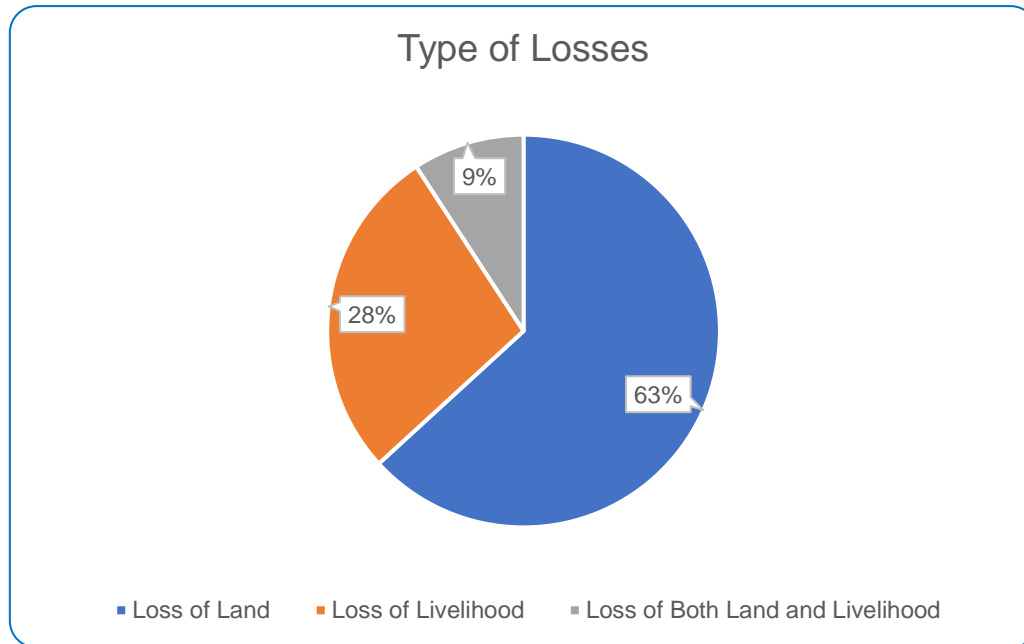
#### 4.1.3.9 Details about the Loosing of Livelihood

##### 4.1.3.9.1 Type of Loss

During the socioeconomic and landowner survey a total of 76 affected individuals were surveyed to understand their condition. Out of them, 63% had only lost their lands and 28% only lost their livelihood partially. There were only 9% of people who lost both lands and livelihood. The people who lost their livelihood partially from the proposed solar power project land, were engaged in income generating activities on those land such as agricultural work and fish farming. During the consultation, the affected landowners expressed satisfaction with their lease payments, as they had experienced losses on this land several times before. Though the livelihood affected people did not get any payment, they were involved in other different types of income generating activities such as driving, small business, daily

laboring, farming, agricultural laboring and so on. Below Figure 4-17 shows the types of the losses in the proposed project area.

**Figure 4-17: Type of Losses**

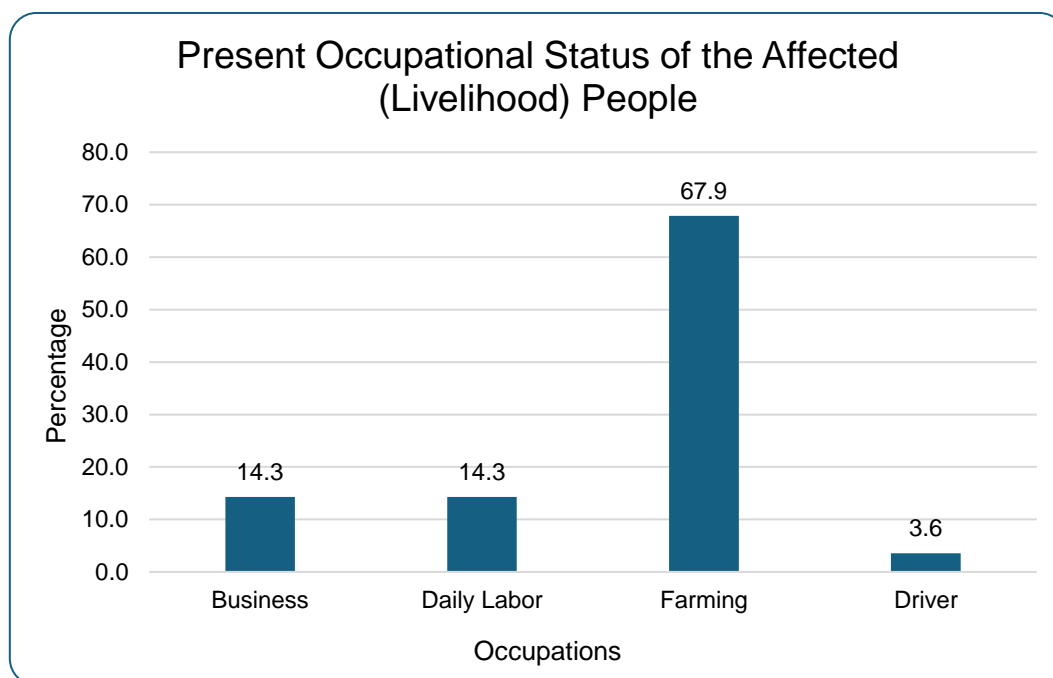


Source: EQMS Socio Economic and Landowner Survey, April 2024

#### **4.1.3.9.2 Present Occupational Status of the Affected (Livelihood) People**

Out of the livelihood affected people, 67.9% are now involved in farming activities. They are now doing farming activities in other lands. The other affected people are now involved in different types of jobs such as business (14.3%), daily laboring (14.3%) and driving (3.6%). Below Figure 4-18 refers to the present occupational status of the affected people of the study area.

**Figure 4-18: Present Occupational Status of the Affected (Livelihood) People**

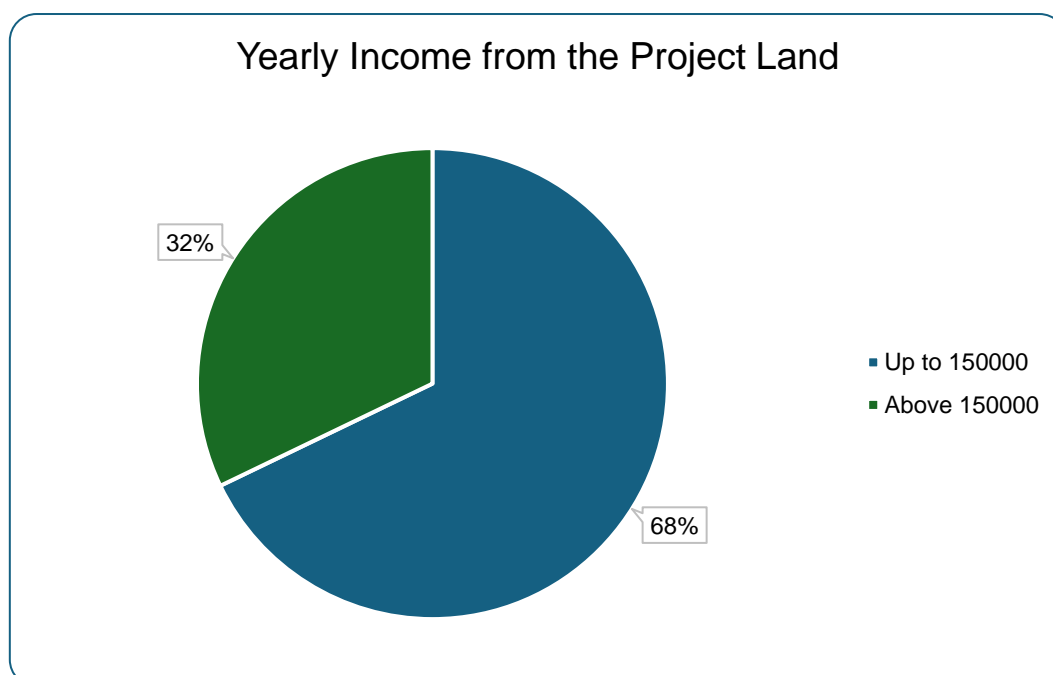


Source: EQMS Socio Economic and Landowner Survey, April 2024

#### 4.1.3.9.3 Affected (Livelihood) Persons' Yearly Income from the Land

The survey results find that 68% of the affected people, who had income from the proposed project land, used to earn up to BDT 1,50,000 per year, whereas the rest 32% earned above BDT 1,50,000 per year. Figure 4-19 shows the yearly income of the affected persons from the project land.

**Figure 4-19: Yearly Income of the Affected (Livelihood) Persons from the Project land**



Source: EQMS Socio Economic and Landowner Survey, April 2024

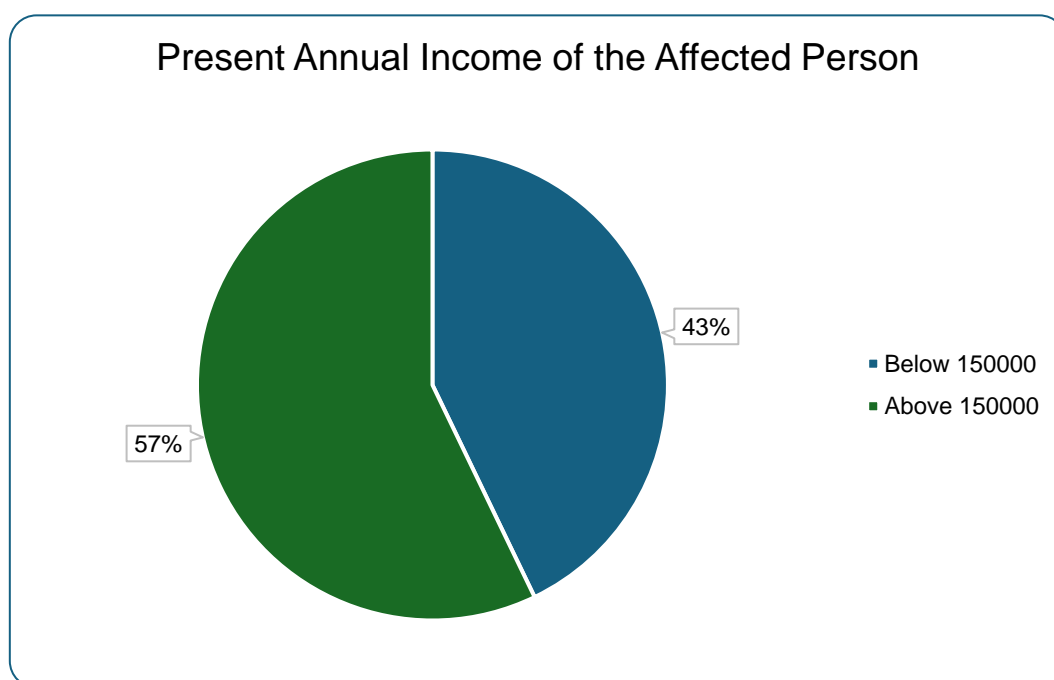
**Table 4-6: Present Annual Income of the Affected People**

Income Range	Male		Female	
	Number	%	Number	%
Below 100000	4	5.26	0	0.00
100000 to 150000	28	36.84	1	1.32
150001 to 200000	14	18.42	0	0.00
200000 to 250000	14	18.42	1	1.32
Above 250000	14	18.42	0	0.00
	<b>74</b>	<b>97.37</b>	<b>2</b>	<b>2.63</b>

#### 4.1.3.9.4 Affected (Livelihood) Persons' Present Yearly Income

The below Figure 4-20 indicates the increase of yearly income of the respondents after the proposed project take their land as lease. Only 43% of the surveyed affected persons are now earning below BDT 150,000 per year whereas the rest 57% have a yearly income of more than BDT 1,50,000.

**Figure 4-20: Present Annual Income of the Affected (Livelihood) Person**



Source: EQMS Socio Economic and Landowner Survey, April 2024

#### 4.1.3.9.5 Loss of Access Road

As per the socioeconomic and landowner survey, it was found that no access road was affected/ lost due to the proposed project.

### 4.1.4 Socioeconomic Profile of Project Area of Influence

#### 4.1.4.1 Demographic Profile

In the study area, a total number of 869 population are living in 220 households that has been surveyed for socio economic study. Among the surveyed HHs, 218 nos. are Male headed, and 2 nos. are Female headed HHs. In terms of individual population distribution, there are a total of 457 males, constituting

53% of the population, and 412 females, representing 47%. The average household size is 3.95 which is lower than the national average (4.0)<sup>4</sup>. Below Table 4-7 shows the Demographic Information of the Project Area of Influence.

**Table 4-7: Demographic Information of the Project Area of Influence**

HH	Male HH	Female HH	Male		Female		Total pop.	HH size
			Pop.	%	Pop.	%		
220	218	2	457	53	412	47	869	3.95

Source: EQMS Socio Economic Survey, April 2024

Among the surveyed population, about 52.6% males and 47.4% females were identified. In the case of age distribution of the surveyed populations, the majority (26%) of the population are concentrated below 14 years and about 20.1% are between 21 to 30 years of age indicating the young adults. About 19.6% are between 31 to 40 years of age while the elderly population (more than 65+) is about 2.2%.

Moreover, 55.2% of the total population are found married while 43.7% of them are unmarried during survey of the study area. A total of 1% identified as widow/widower and divorced.

All over, health status among the households has been found quite well. Around 99.4% of the population are found physically normal, only 0.6% are found physically challenged. Table 4-8 shows the Demographic Profile of the study area.

**Table 4-8: Profile- Age, Marital Status and Health Status of the Project Area of Influence**

S/N	Demographic Information		Population	
			No	%
1	Population	Male	457	52.6
		Female	412	47.4
		Total	869	100
2	Age	Below 14	227	26.0
		15 to 18	76	8.7
		19 to 20	37	4.3
		21 to 30	175	20.1
		31 to 40	170	19.6
		41 to 50	105	12.1
		51 to 65	60	6.9
		Above 65 years	19	2.2
		Total	869	100
3	Marital Status	Married	480	55.2
		Unmarried	380	43.7
		Widow/Widower	8	0.9
		Divorced	1	0.1
		Total	869	100
4	Health Status	No Disability or incurable diseases	864	99.4
		Person with disabilities	5	0.6
		Total	869	100

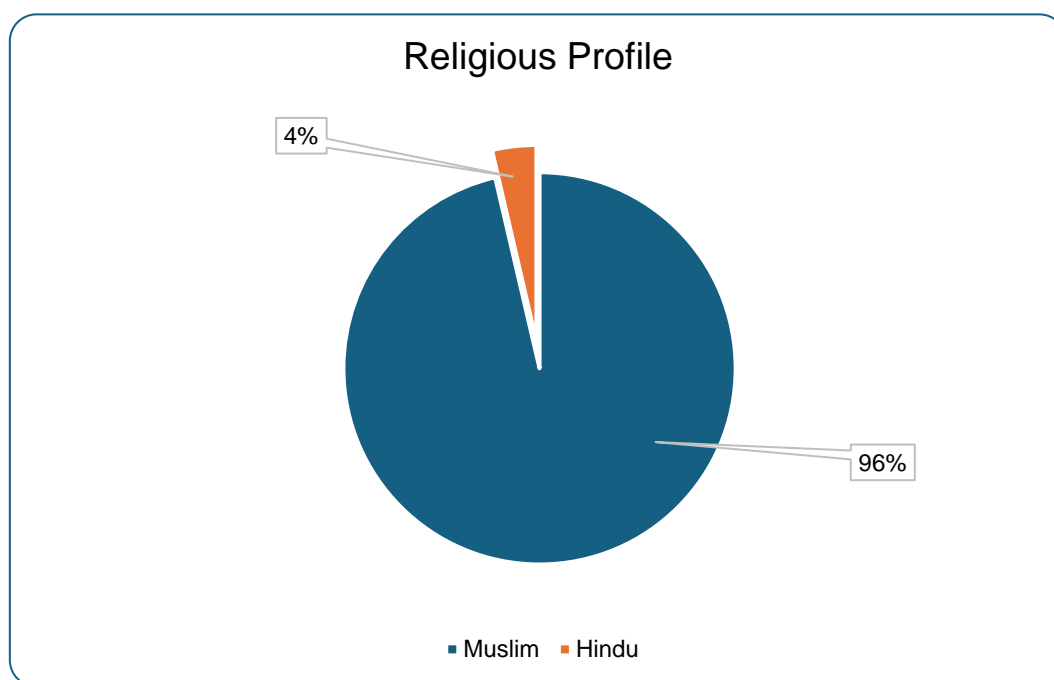
<sup>4</sup> Population and Housing Census 2022 – Preliminary Report

Source: EQMS Socio Economic and land-owner Survey, April 2024

#### 4.1.4.2 Religious Affiliation

According to the findings of the socio-economic survey, the study area is Muslim dominated where about 96% of the people are Muslim while only 4% are Hindu by faith. The Figure 4-21 shows the religious profile of the people of Project Area of Influence:

Figure 4-21: Religious Profile of the Project Area of Influence



Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.3 Ethnic Composition

According to the socio-economic survey and consultation with local people conducted by the study team, no indigenous or ethnic minority populations were identified within 2 km from the project area.

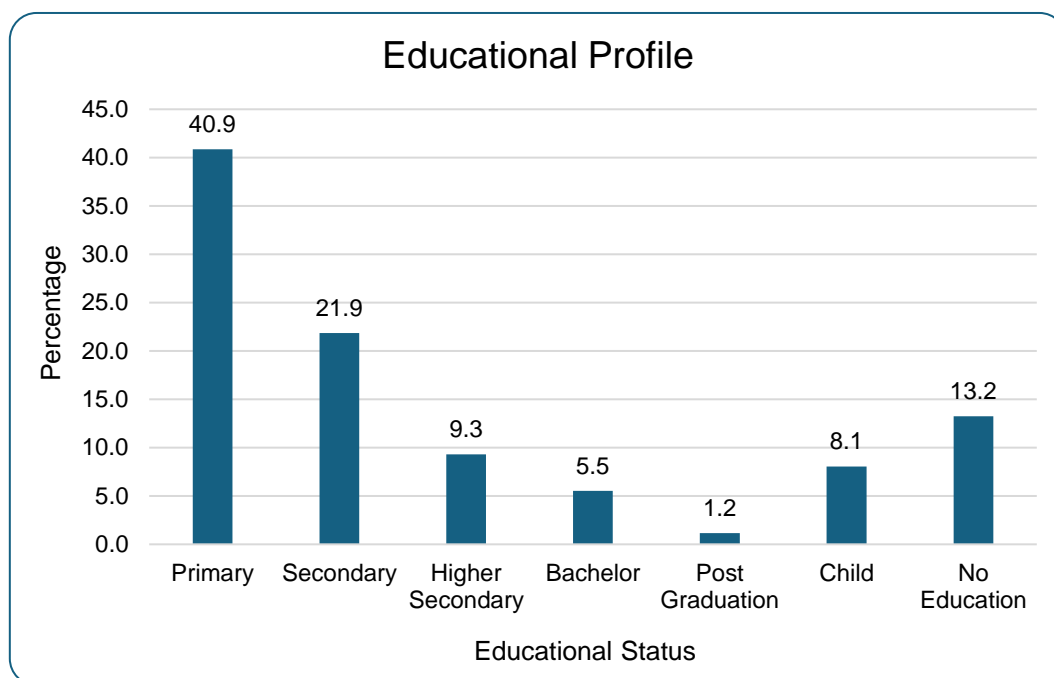
#### 4.1.4.4 Educational Status

According to socioeconomic primary data, the majority of the (40.9%) population in the study area completed primary level of education. A considerable proportion of the population (21.9%) completed secondary school. While only 9.3% of the population had access to higher secondary education. Only 5.5% and 1.2% of people have completed respectively B.A and M.A or equivalent degrees. According to survey results, the illiteracy rate is 13.2%. The total literacy rate of the area of influence is 78.7 which is higher than the national literacy rate (74.7%)<sup>5</sup> of Bangladesh. Children account for approximately 8.1% of the population. Below Figure 4-22 depicted the education profile of the surveyed people of area of influence of the proposed project.

<sup>5</sup> Population and Housing Census 2022 – Preliminary Report



**Figure 4-22: Education Profile of the Project Area of Influence**



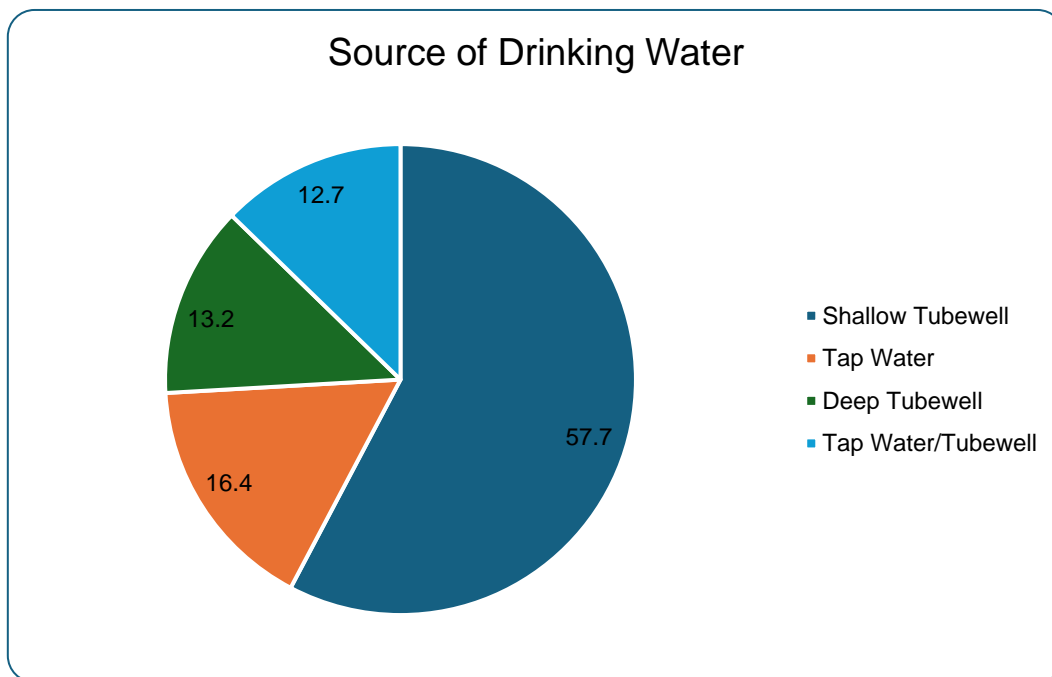
Source: EQMS Socio Economic Survey, April 2024

#### **4.1.4.5 Public Utilities of Project AOI**

##### **4.1.4.5.1 Access to Water**

In the project AOI during survey, it was found that all households have access to water for drinking, cooking and other regular household usage. Here 57.7% people source water from shallow tubewell, 16.4% of the household collect tap water and 13.2% of the household use deep tubewell for water collection. 12.7% of households obtain water from a combination of sources, such as utilizing both deep and shallow tubewells. Below Figure 4-23 shows the status of access to safe water of the Project AOI.

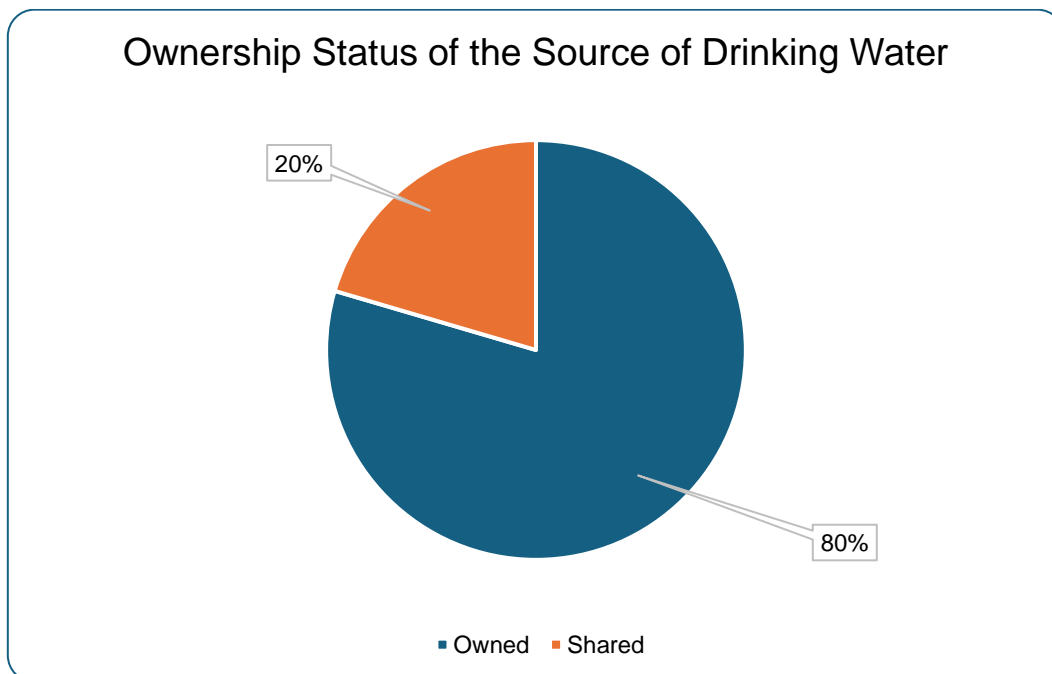
**Figure 4-23: Access to Water in the Project Area of Influence**



Source: EQMS Socio Economic Survey, April 2024

In the project area of Influence, most of the people (79.5%) collect water from their own drinking water source, whereas only 20.5% collect water from different shared water sources. Below Figure 4-24 shows the Ownership Status of the Source of Drinking Water at Project Aol.

**Figure 4-24: Ownership Status of the Source of Drinking Water at Project Aol**



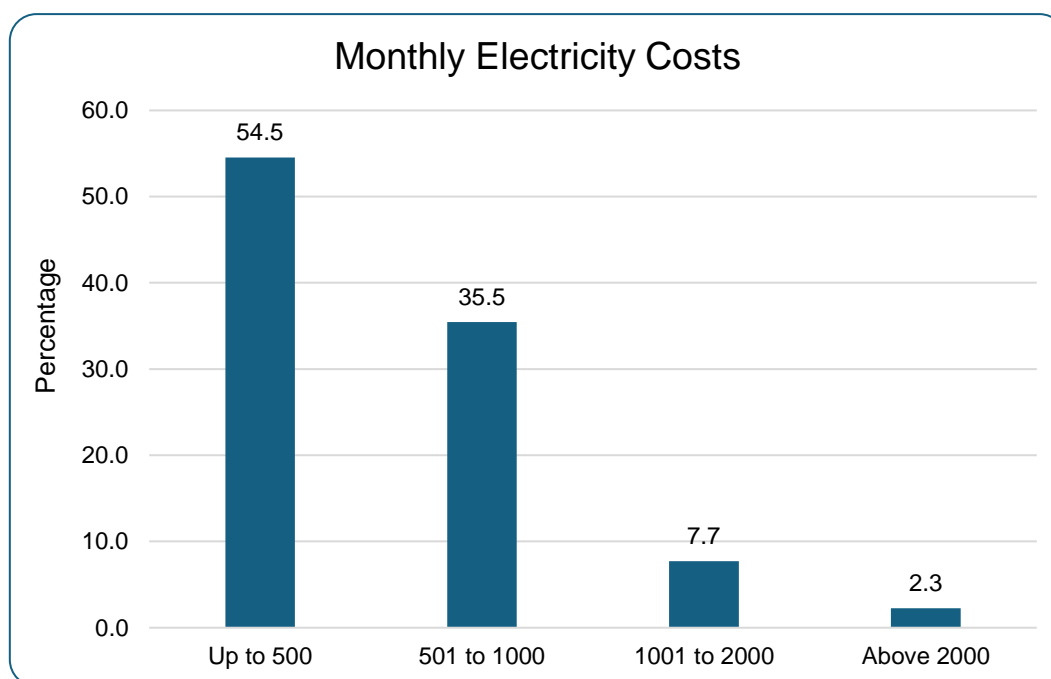
Source: EQMS Socio Economic Survey, April 2024

#### **4.1.4.5.2 Access to Electricity and Monthly Electricity Costs**

Electricity is an important indicator for measuring the quality of life. In the study area, survey results found that all the surveyed households have access to electricity from the grid.

Most of the surveyed households (54.5%) of the project area of influence, spend up to BDT 500 per month and 35.5% has to spend within BDT 500 to 1000 per month. Only 2.3% of households spend above BDT 2000 per month on their electricity cost. Below Figure 4-25 shows the overview of monthly electricity cost at project Aol.

**Figure 4-25: Monthly Electricity Cost at Project Aol**

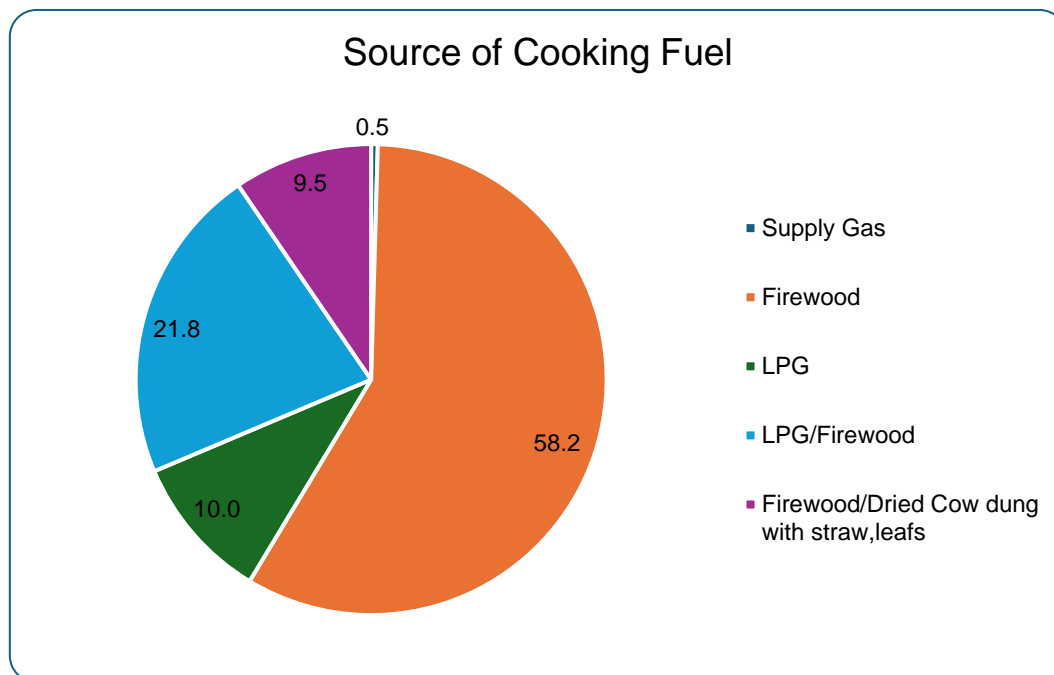


Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.5.3 Source of Cooking Fuel and Monthly Fuel Cost

The surveyed data outlines the diverse cooking fuel preferences within the surveyed people of project area of influence. Firewood, a traditional fuel, is still widely used by 58.2% of households. Only 10% use LPG and 0.5% use supplied natural gas. 21.8% of households use both LPG gas and firewood for cooking purposes. Energy access in the project Aol is presented hereunder Figure 4-26.

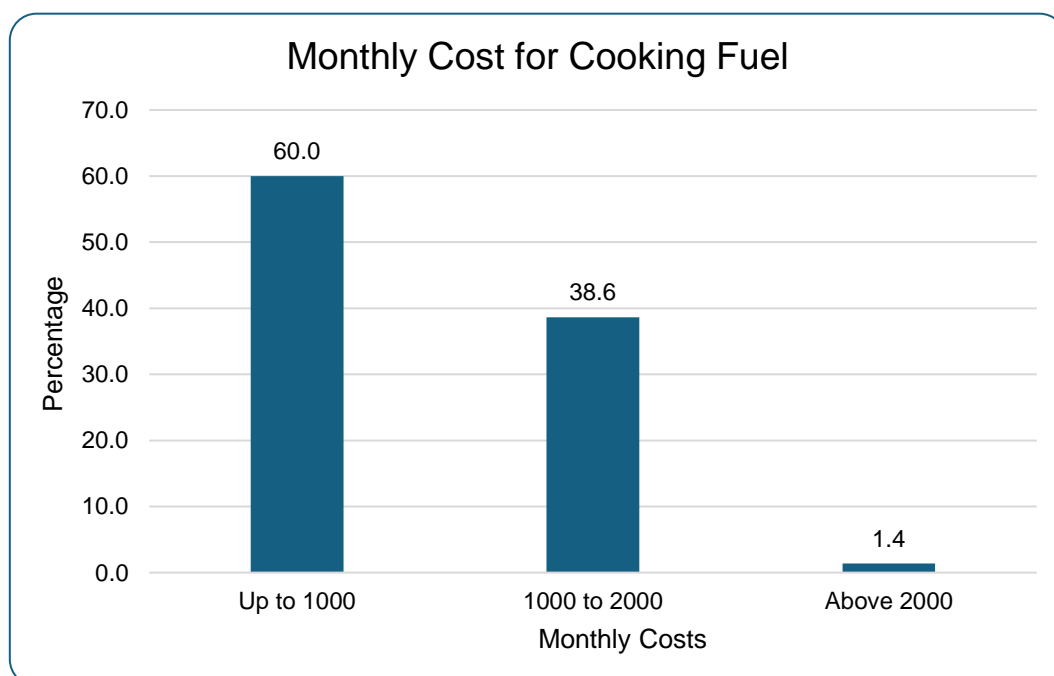
**Figure 4-26: Source of Cooking Fuel at Project Aol**



Source: EQMS Socio Economic Survey, April 2024

Around 60% of households have to spend up to 1000 BDT per month for fuel cost. On the other hand, 38.6% of the households spend between BDT 1000 to 2000 per month and only 1.4% spend above BDT 2000 per month for their cooking fuel cost. Below Figure 4-27 shows the cooking fuel cost of the households of project Aol.

**Figure 4-27: Monthly Cooking Fuel Cost at Project Aol**

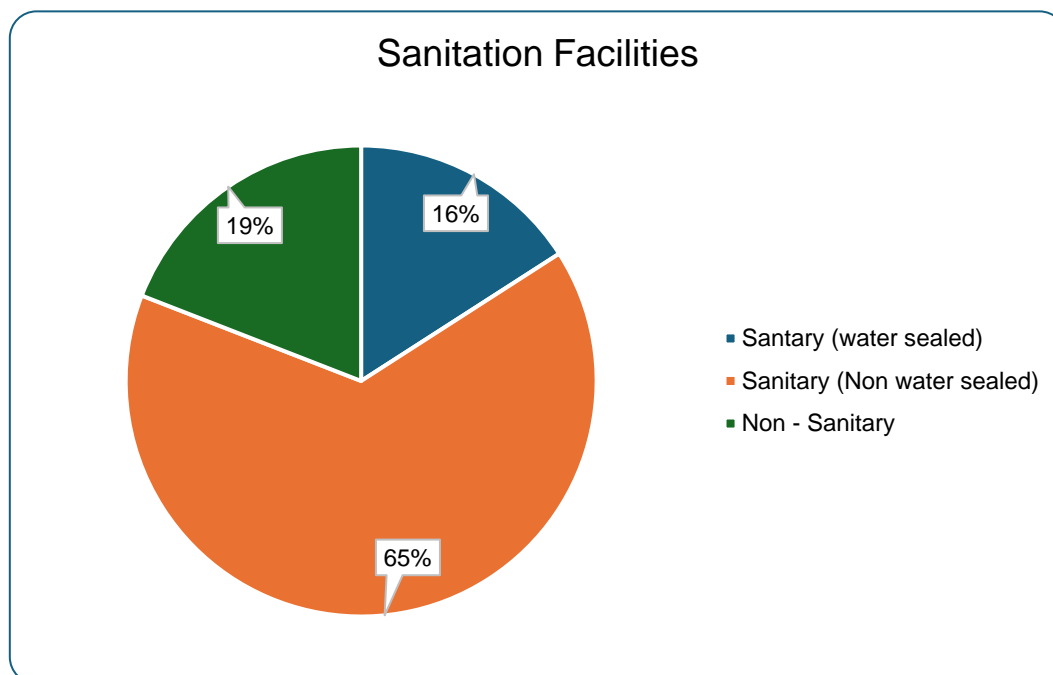


Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.5.4 Sanitation Facility

Primary survey results demonstrate that 65% households of the study area are using sanitary latrine (non-water sealed) and 15.9% are using water seal sanitary latrine. Additionally, 19.1% of the households included in the survey use non-sanitary toilet facilities. Available sanitation facilities available in the project area of influence is presented in below Figure 4-28.

**Figure 4-28: Sanitation Facilities in the Study Area**



Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.6 Traffic and Transport

During the survey, it was found that only 3.6% of the total road network of the proposed project area are earthen road whereas 96.4% are pavement road. Various types of vehicles are available on these roads including CNG, Rickshaw, Van, Auto rickshaw, motorcycle etc.

#### 4.1.4.7 Access to Social Institution for the Surveyed People of Project Aol

##### 4.1.4.7.1 Access to Educational Institutions

Table 4-9 shows the educational institution accessibility in the proposed project area. Study finds that 86.4% of total students has to travel up to 1 km for receiving elementary/basic education whereas 13.6% of the students has to travel around 1 to 3 km for receiving the same opportunity. On the other hand, 88.2% of the students has to travel around 1 to 3 km to receive Higher secondary degrees. Conversely, 10.5% of the students have to travel up to 1 km and only 1.4% have to travel more than 3 km to receive the same degrees. For receiving Bachelor/ post-graduation degree, 87.7% of the students need to travel around 1 to 3 km, whereas 6.4% of the students travel up to 1 km and only 5.9% travel more than 3 km.

On average, 34.4% of the total students have to move up to 1 km for receiving educational facilities whereas 63.2% have to move 1 to 3 km and only 2.4% have to move above 3 km for the purpose of education.

**Table 4-9: Access to Education**

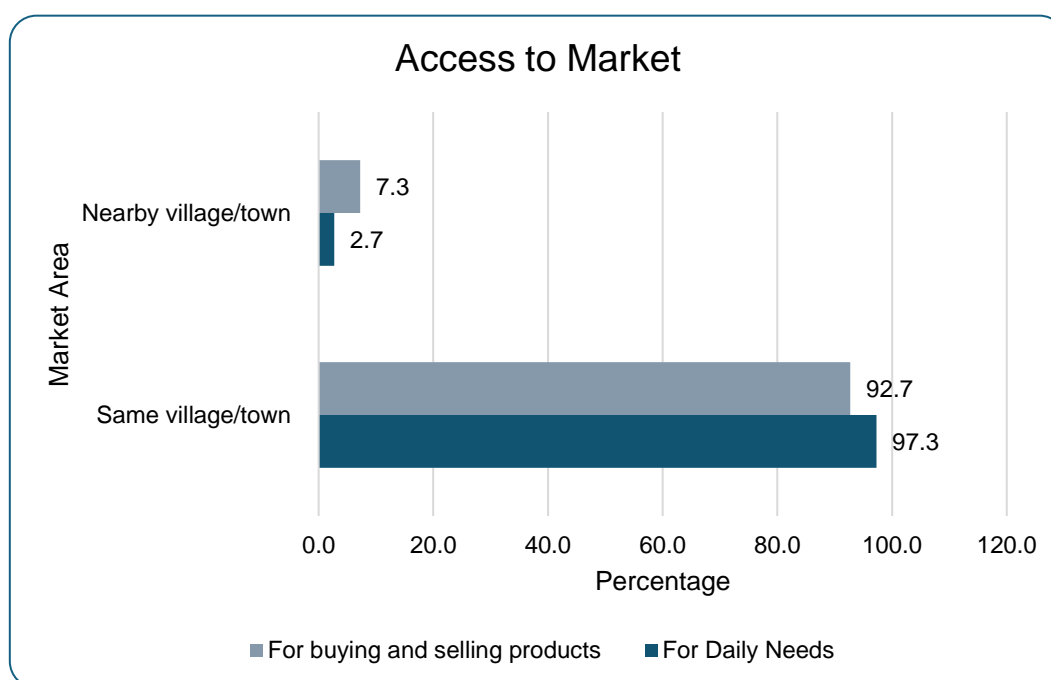
Distance	Elementary/ Basic Education	Higher Secondary	Bachelor/ Post Graduation	Total
Up to 1km	86.4	10.5	6.4	34.4
1 to 3 km	13.6	88.2	87.7	63.2
Above 3 km	0.0	1.4	5.9	2.4

Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.7.2 Access to Market

Survey results have found that 97.3% of the surveyed people go to the markets of their own town to buy daily need items whereas only 2.7% of the surveyed people go to the markets of nearby towns for the same purpose. On the other hand, 92.7% of the surveyed people usually go to the markets of their own town and only 7.3% go to other towns for buying and selling products. The survey result indicates that, local people have available market facilities in their own village/ town. Below Figure 4-29 shows the accessible market facilities in the project area of influence.

**Figure 4-29: Access to Market Facilities**



Source: EQMS Socio Economic Survey, April 2024

Survey results have also found that 95.5% of the surveyed people have to move up to 1 km for buying daily needs whereas only 4.5% need to go more than 1 km for the same purpose. On the other hand, 93.6% of the total surveyed people have to move up to 1 km for buying and selling products. Conversely, only 6.4% have to move more than 1 km for the same purpose. Below Table 4-10 shows the distance to the market facilities for the surveyed people of the project Aol.

**Table 4-10: Distance to Market**

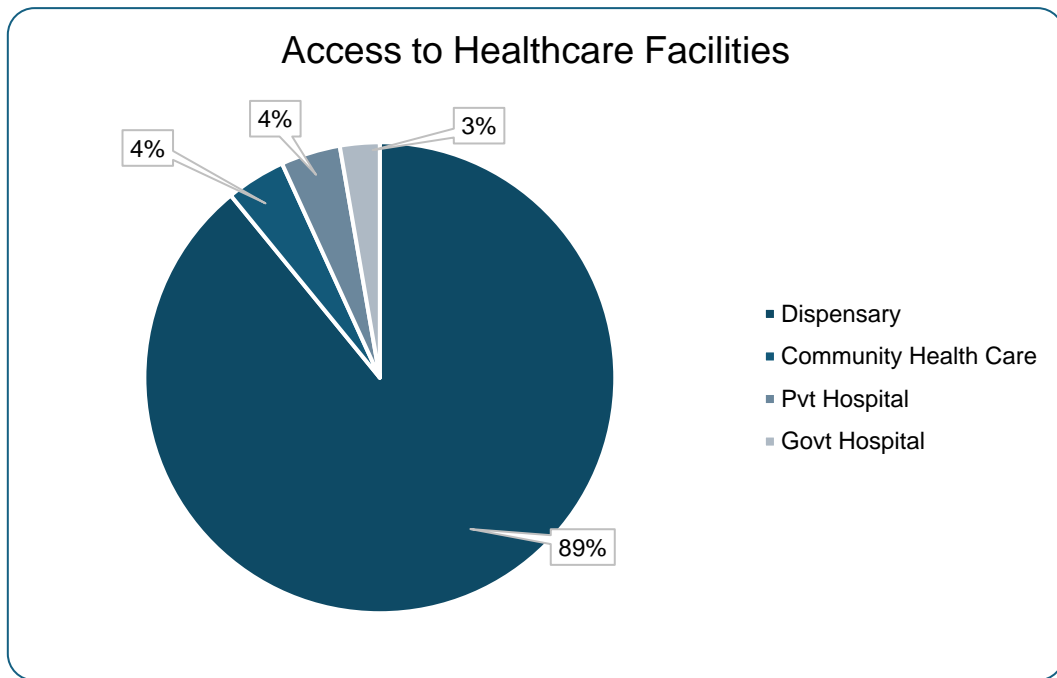
Distance	For Daily Needs (%)	For Buying and Selling Products (%)
Up to 1km	95.5	93.6
More than 1 km	4.5	6.4
Total	100.0	100.0

Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.7.3 Access to Healthcare Facilities

Survey results have found that 89.1% of the households go to their nearest dispensary for their general healthcare services, whereas the rest of the households go to community health care center (4.1%), Private hospital (4.1%) and government hospital (2.7%) for the same purpose. Below Figure 4-30 shows the access to Healthcare facilities for the surveyed households of project Aol.

**Figure 4-30: Access to Healthcare Facilities in the project Aol**

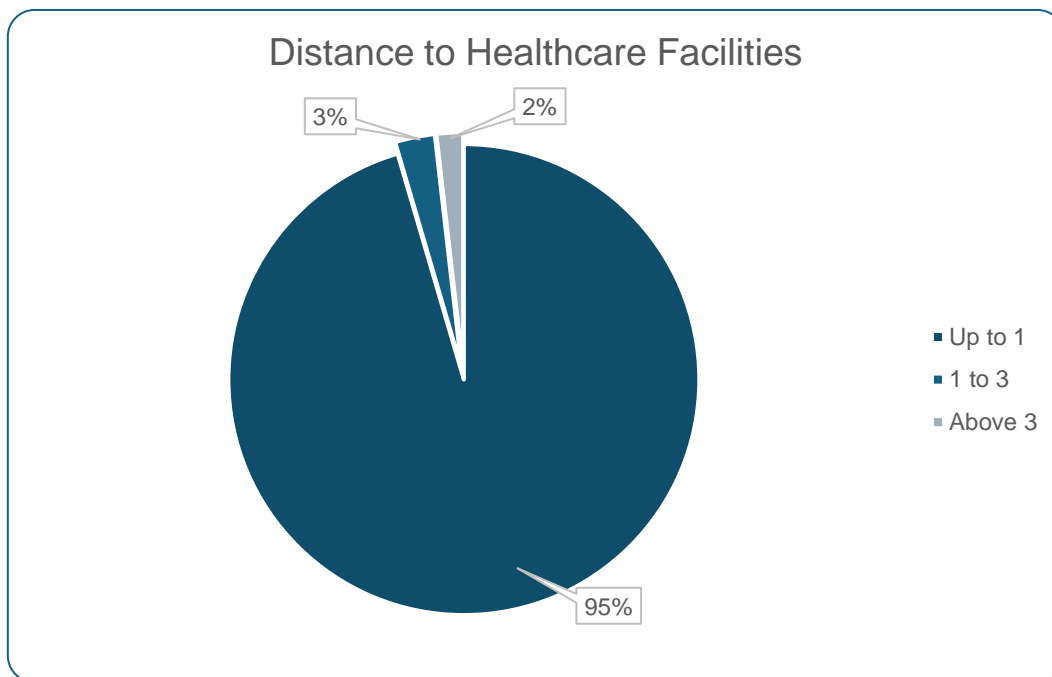


Source: EQMS Socio Economic Survey, April 2024

Out of the surveyed households of the project Aol, around 95.5% of households are staying within 1 km distance from the health service point. On the other hand, only 2.7% live within 1 to 3 km distance from the hospital services. Below Figure 4-31 shows the distance to the healthcare facilities from the surveyed households of project Aol.



**Figure 4-31: Distance to Healthcare Services**



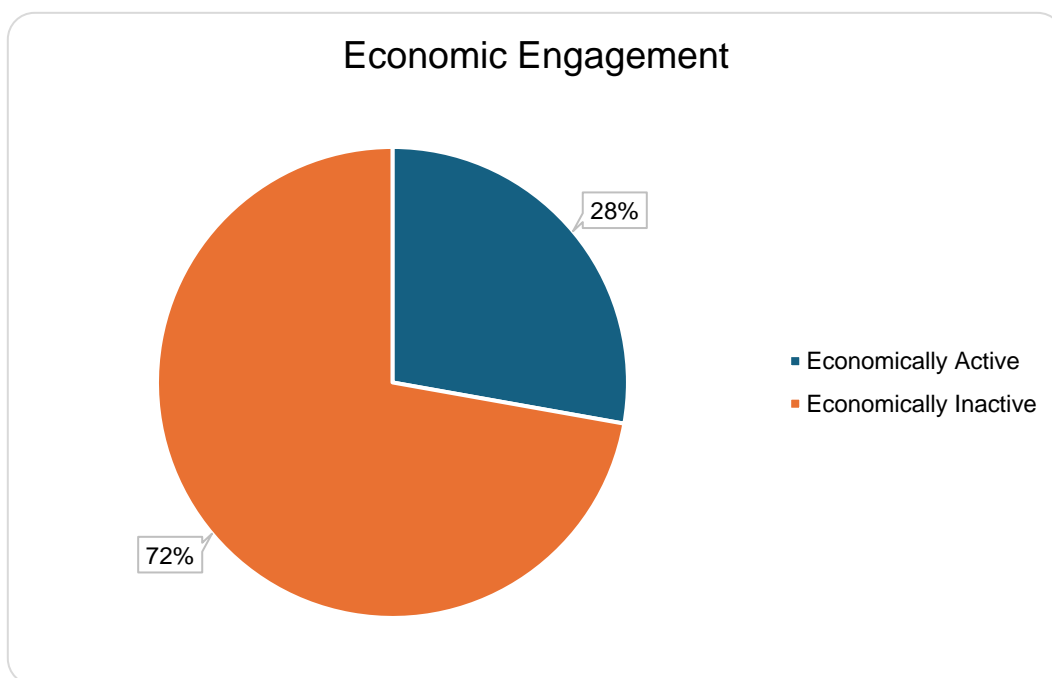
Source: EQMS Socio Economic Survey, April 2024

#### **4.1.4.8 Economy and Employment**

##### **4.1.4.8.1 Economic Engagement of the Surveyed Households of Project Aol**

In the study area, only 27.8% of the total surveyed population is involved in economic activities through various occupations. On the contrary, 72.2% of those polled are economically inactive. Figure 4-32 depicted the economic engagement of project area of influence.

**Figure 4-32: Economic Engagement of Local People**



Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.8.2 Occupation Profile of the Surveyed Households of Project Aol

According to the socio-economic survey findings of the area of influence, majority of the economically active male (32.2%) are engaged in daily laboring activities, while the lowest number of people are carpenters (0.4%) and technicians (0.4%). Conversely, only a few numbers of women (3.3%) are economically active who are involved in daily labor (1.7%), service (1.2%) and tailor (0.4%) activities.

The survey conducted in the project area of influence indicates that 72% of the population is economically inactive, attributed to various reasons. This includes 47.7% of males being students and 4.9% of females working as housewives. A detail of economically active and inactive populations according to their field of engagement of project area of influence is presented in Table 4-11.

**Table 4-11: Economically Active and Inactive Populations Occupation Profile**

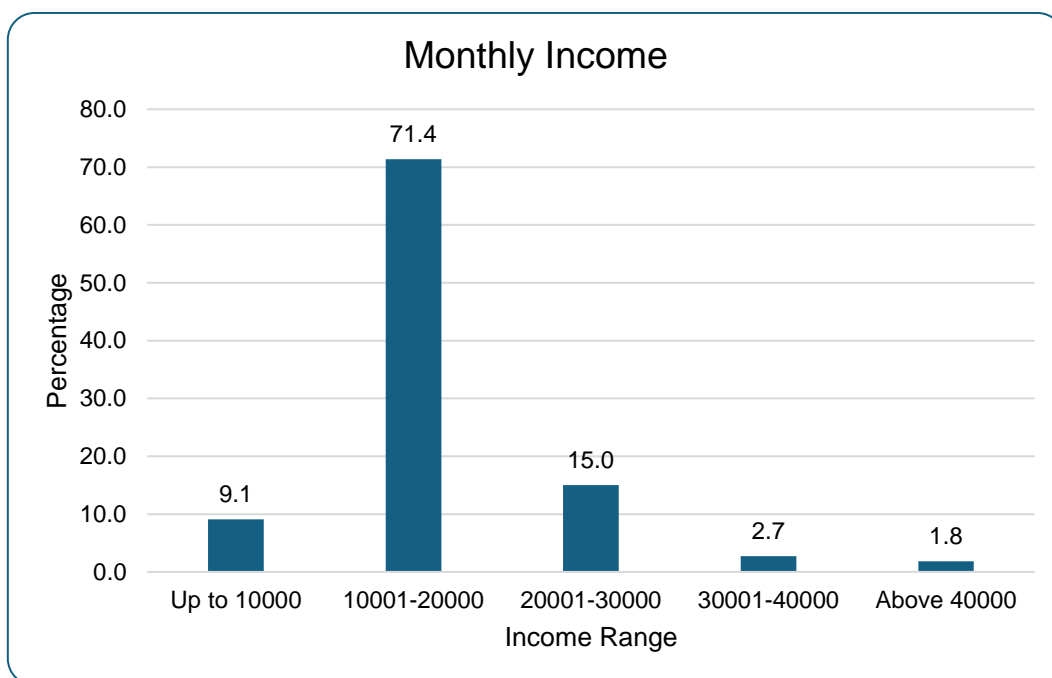
Employment Status	Field of Engagement	Male (%)	Female (%)	Total (%)
Economically Active	Farming	16.1	0.0	16.5
	Agricultural Labor	6.6	0.0	7.0
	Fisherman	3.3	0.0	3.7
	Daily Labor	23.1	1.7	24.8
	Service	16.5	1.2	16.5
	Commercial business, Shops etc	18.6	0.0	18.6
	Driving	8.7	0.0	8.7
	Tailor	1.7	0.4	2.1
	Carpentry	0.4	0.0	0.4
	Mechanics	1.2	0.0	1.2
	Technicians	0.4	0.0	0.4
<b>Sub-total</b>		<b>96.7</b>	<b>3.3</b>	<b>100.0</b>
Economically Inactive	Student	26.8	20.9	47.7
	Unemployed/ Job Seeker	0.2	0.2	0.3
	Unpaid Family work/Housewife	0.0	34.9	34.9
	Child and Elderly	8.6	8.5	17.1
<b>Sub-total</b>		<b>35.6</b>	<b>64.4</b>	<b>100.0</b>

Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.8.3 Monthly Income

According to the socioeconomic survey, it is found that most (71.4%) of the household's income range is from 10000 to 20000 BDT. The monthly income of the adjacent HHs of project area of influence is given in below Figure 4-33.

**Figure 4-33: Monthly Income of the Project Area of Influence**



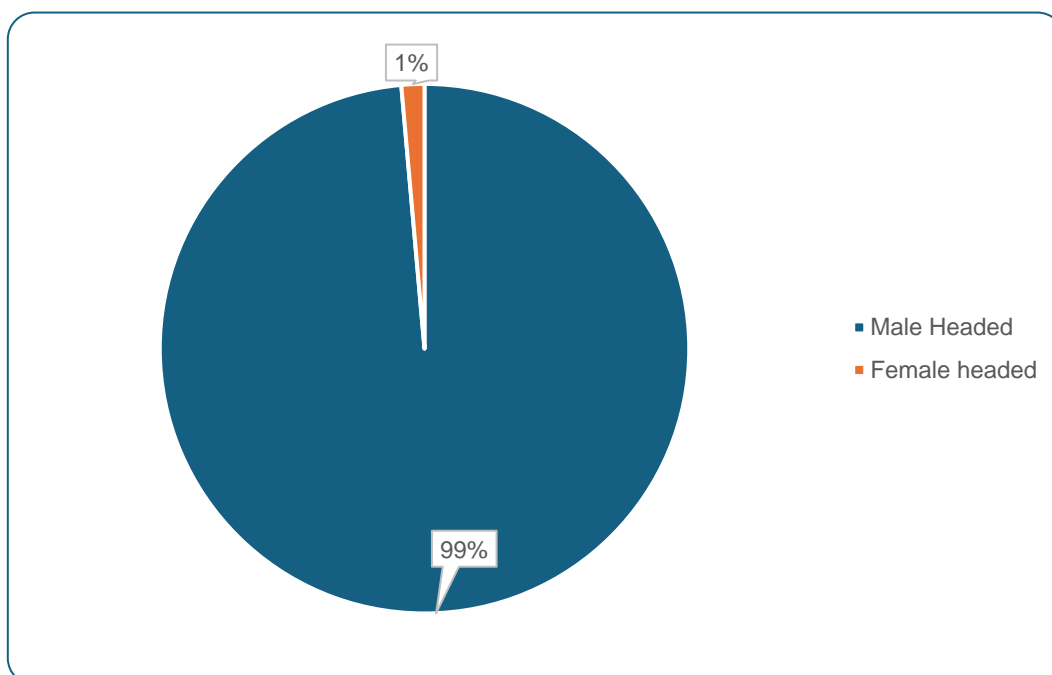
Source: EQMS Socio Economic Survey, April 2024

#### 4.1.4.9 Gender Analysis

##### 4.1.4.9.1 Gender Analysis based on Household Head

Study finds the common patriarchic scenario in the local area. It has been found that only 1% households are headed by women.

**Figure 4-34: Gender Analysis based on Household Head**

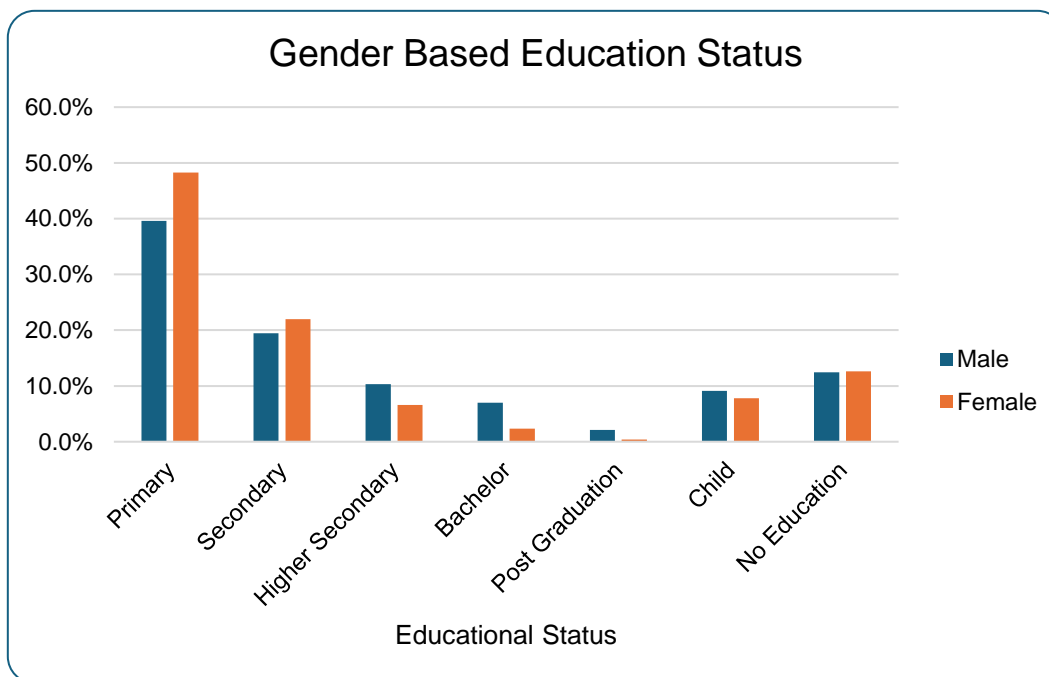


Source: EQMS Socio Economic and Landowner Survey, April 2024

#### 4.1.4.9.2 Gender Based Education and Occupation

According to the findings of the study, females are nearly as educated as their male counterparts at every level. A gender-based education status of the study area is given in Figure 4-35 .

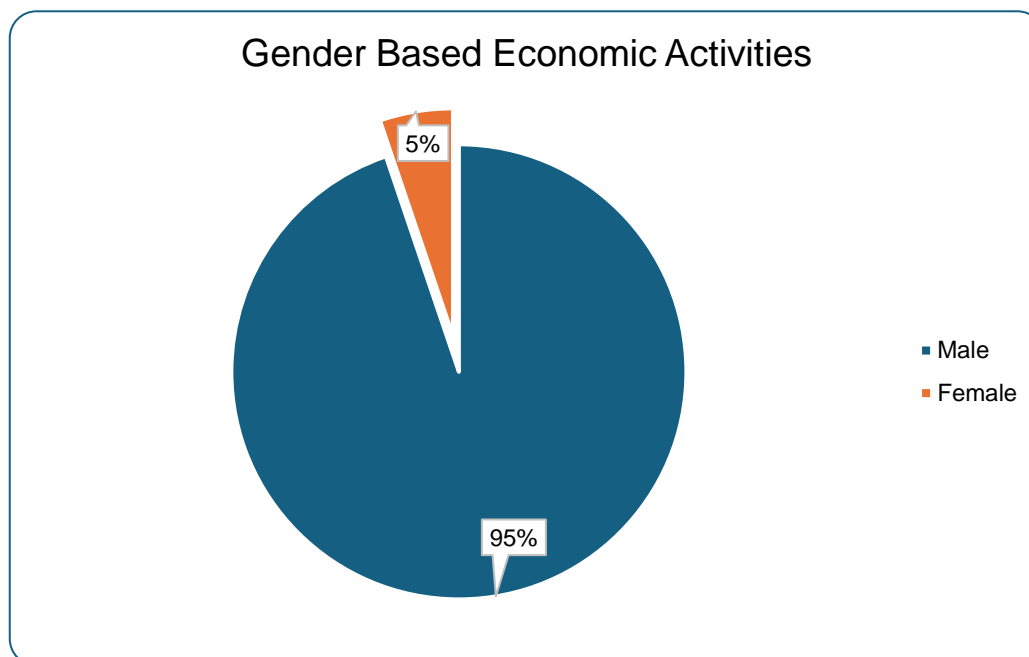
**Figure 4-35: Educational attainment based on Gender**



Source: EQMS Socio Economic and Landowner Survey, April 2024

Unlike the education attainment, female population are found lagging in economic activities. It is found that, only 5% female of total economically active population are engaged in different economic activities.

**Figure 4-36: Gender Based Economic Activity in the Study Area**



Source: EQMS Socio Economic and Landowner Survey, April 2024

#### 4.1.4.9.3 Other Relevant Issues (Decision making power, Ownership and Restrictions)

The below Table 4-12 highlights significant gender disparities within households, particularly in land ownership and financial control. Males dominate these aspects, while females have limited representation.

As per 99.3% of surveyed households, women of the area are allowed to travel outside the community. Moreover, they also can join and give their opinion in the decision-making process of the HHs. But, in the cases of land ownership and earning activities, women are largely lagging behind. These findings underscore the importance of promoting gender-inclusive practices for equitable household dynamics.

**Table 4-12: Gender Analysis based on Decision Making Power**

SI No	Components	Yes	No
1.	Women of the household / girl child are allowed to travel outside the community/ village alone	99.3%	0.7%
2.	Women of the household are involved in financial decisions of the household	88.7	11.3

SI No	Components	Male	Female	Both
1.	The owner of Household land	89.8%	1.5%	8.7%
2.	Decision maker of HHs	30.5%	0.4%	69.1%
3.	Prime earning member of HHs	96.0%	0.7%	3.6%

Source: EQMS Socio Economic and Landowner Survey, April 2024

#### 4.1.4.10 Current Issues in the Project Area

The provided data outlines the perceptions of individuals regarding various aspects of their social and environmental issues, with responses categorized into different levels of concern. Social issues are unexpected situations which hinder leading a normal life in a society. It may include gender-based violence (GBV)/ Sexual Exploitation, Abuse and Harassment (SEAH), Social Security, Unemployment, Gender Inequality etc. Environmental problems that are perceived by the respondents in the study area include air pollution, sound pollution, water pollution and water logging etc. Below Table 4-13 shows the current issues of the project area.

**Table 4-13: Current Issues in the Study Area**

SL#	Details		Frequency	Percent (%)
1	GBV/ SEAH	High	0	0.0%
		Moderate	31	11.3%
		Low	61	22.2%
		No Problem	183	66.5%
Total			275	100.0%
2	Social Security	High	0	0.0%
		Moderate	41	14.9%
		Low	64	23.3%
		No Problem	170	61.8%
Total			275	100.0%

SL#	Details		Frequency	Percent (%)
3	Unemployment	High	39	14.2%
		Moderate	52	18.9%
		Low	102	37.1%
		No Problem	82	29.8%
Total			275	100.0%
4	Gender Inequality	High	2	0.7%
		Moderate	10	3.6%
		Low	109	39.6%
		No Problem	154	56.0%
Total			275	100.0%
5	Air Pollution	High	3	1.1%
		Moderate	57	20.7%
		Low	177	64.4%
		No Problem	38	13.8%
Total			275	100.0%
6	Sound Pollution	High	3	1.1%
		Moderate	56	20.4%
		Low	183	66.5%
		No Problem	33	12.0%
Total			275	100.0%
7	Water Pollution	High	5	1.8%
		Moderate	88	32.0%
		Low	67	24.4%
		No Problem	115	41.8%
Total			275	100.0%
8	Water Logging	High	0	0.0%
		Moderate	22	8.0%
		Low	227	82.5%
		No Problem	26	9.5%
Total			275	100.0%

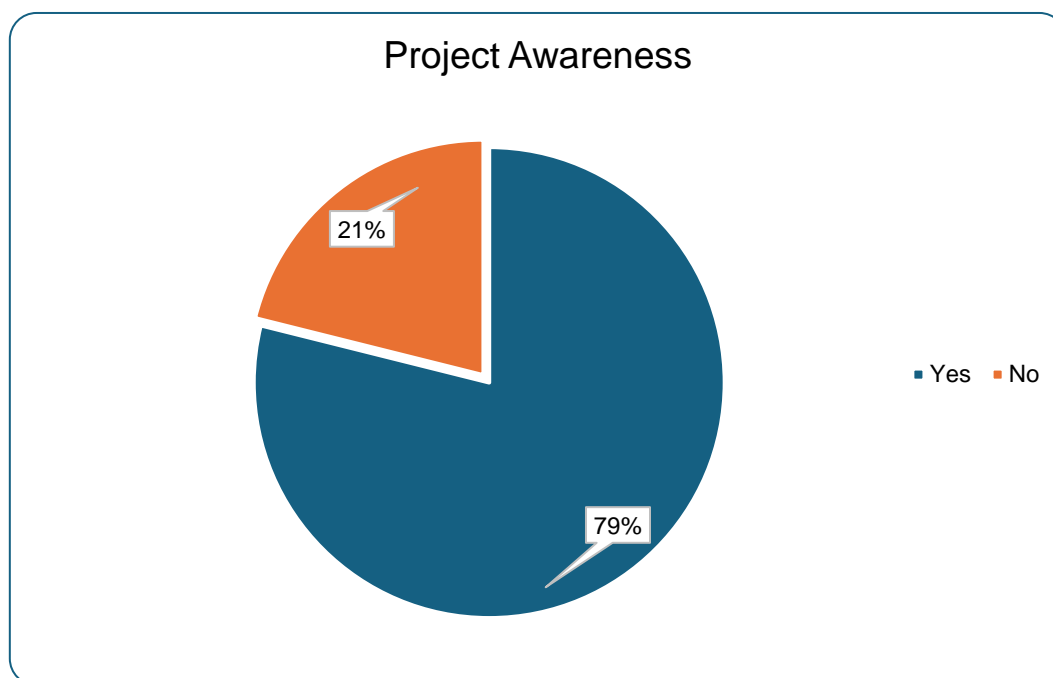
Source: EQMS Socio Economic and Landowner Survey, April 2024

#### 4.1.4.11 Information About Proposed Project

##### 4.1.4.11.1 Project Awareness

Project awareness and perception may hinder or facilitate any project work's successful implementation. Moreover, community perception will lead to guide maintaining project activities in line with environmental & social standards. The survey result shows that 79% of total households are completely aware of this proposed project. They were informed about the proposed project by project authorities and local people. Conversely, 21% of total households are found indifferent and know nothing regarding this project. Below Figure 4-37 shows the project awareness of local people.

**Figure 4-37: Awareness about the Project**



Source: EQMS Socio Economic and Landowner Survey, April 2024

#### 4.1.4.11.2 Perceived Impact

The data indicates a prevailing positive sentiment, with all respondents perceiving a beneficial impact from the project. This optimistic outlook suggests a widespread belief in the project's potential to bring positive change or benefits to the community.

## 4.2 Assessment of Land Leasing and Procurement Process

This section provides an understanding of the land requirement of the project and the land procurement process, reviews the consideration of safeguards put in place for land take process for the project. The review compares adopted land procurement with safeguards to be adopted for land taken in accordance with the applicable reference framework of this assessment.

## 4.3 Total Land Requirement for the Project

The total land requirement for the Project is provided below.

**Table 4-14: Land Requirement for the Project**

Project Component	Location (Union)	Land requirement (acres)	Area	Previous landowner
Transformer Area (total 8)	Both in Nimuria (4) and Raghunathpur (4)	1.16		Private
Substation/MCR	Nimuria	0.4		Private
Barrak room	Nimuria	0.12		Private
Warehouse	Nimuria	0.15		Private
Others	Nimuria	0.13		Private



Project Component	Location (Union)	Land requirement (acres)	Area	Previous landowner
(dorm, guest house, kitchen)				
Solar plant installation	Both in Nimuria and Raghunathpur	60		Private
Road	Both in Nimuria and Raghunathpur	2.64		Private
Weather Station	Nimuria	0.4		Private
Transmission line (each pole)	Nimuria	8 km  300 mm dia/2 sq ft diameter posts		Transmission line will utilize existing BREB posts within existing road right of way. Additional 2 poles at the existing right of way of the access road of the solar power plant will be installed. BREB has not finalized the specific location yet.
Security Cabin & security post in the boundary area	Both in Nimuria and Raghunathpur	0.6		Private
Temporary project component and facilities, and vacant Area	Both in Nimuria and Raghunathpur	2.4		Private
<b>Total</b>		<b>68 acres</b>		

#### 4.4 Brief of the Land Procurement and Leasing Process

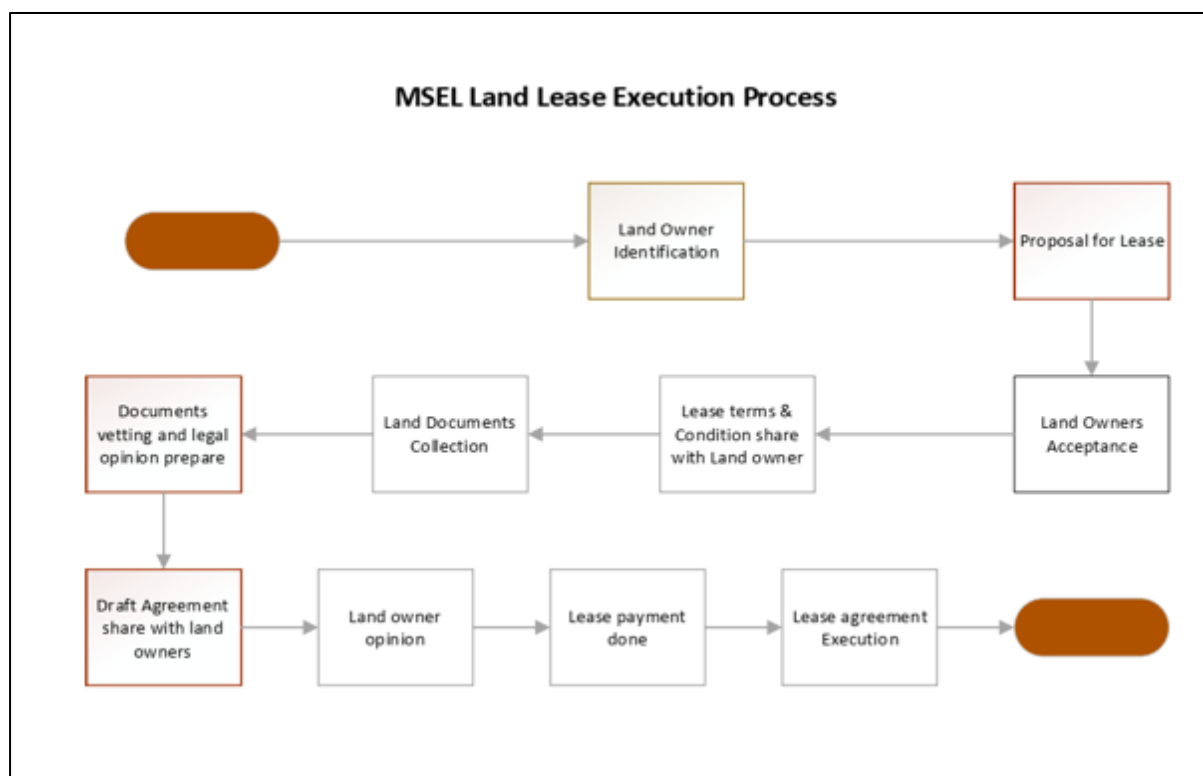
The land of MSEL is located at Nimuria Mouza under Muktagacha Upazila of Mymensingh Division. The total amount of the land is private land and owned by the local people. The proposed project started their land procurement and leasing process from 2022. The land requirement for the proposed project is approximately 68 acres comprising the main plant area and auxiliary facilities such as warehouse and guard barrack. As per the discussions with MSEL, landowner and local community, most of the land parcels are wetlands and few land parcels are single-cropped agricultural land as well as fisheries land. The project's establishment would result in a change in land use of the proposed project site from agricultural or beel to industrial for a limited period.

As per MSEL, the process of leasing the land commenced with the identification of landowners in May 2022. By July 2022, a proposal for the lease was made, and the landowners accepted it the same month. The landowners suggested holding a physical meeting with local members and other influential people of the area. Consequently, MSEL arranged a meeting on July 22, 2022, which was attended by the landowners, local influential people, and local members. During the meeting, MSEL discussed the project and the land procurement process. They inquired about the current land leasing rate, which was approximately BDT 1500 to 2000 per katha<sup>6</sup> at the time. The local people demanded BDT 3000 per katha per year, with an additional 10% increase every five years. MSEL authorities agreed to these terms and began land leasing process. In September 2022, the lease terms and conditions were shared with the landowners. Following this, land document collection occurred in December 2022, and the documents were vetted, with a legal opinion prepared by February 2023. A draft agreement was then shared with the landowners in March 2023, to which the landowners expressed no objections, indicating their acceptance. The lease payment was disbursed with the agreed lessors in July 2023, and the lease agreement was executed that same month. Below Figure 4-38 shows the land leasing execution process of MSEL.

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<sup>6</sup> 1 Katha = 6.5 decimals

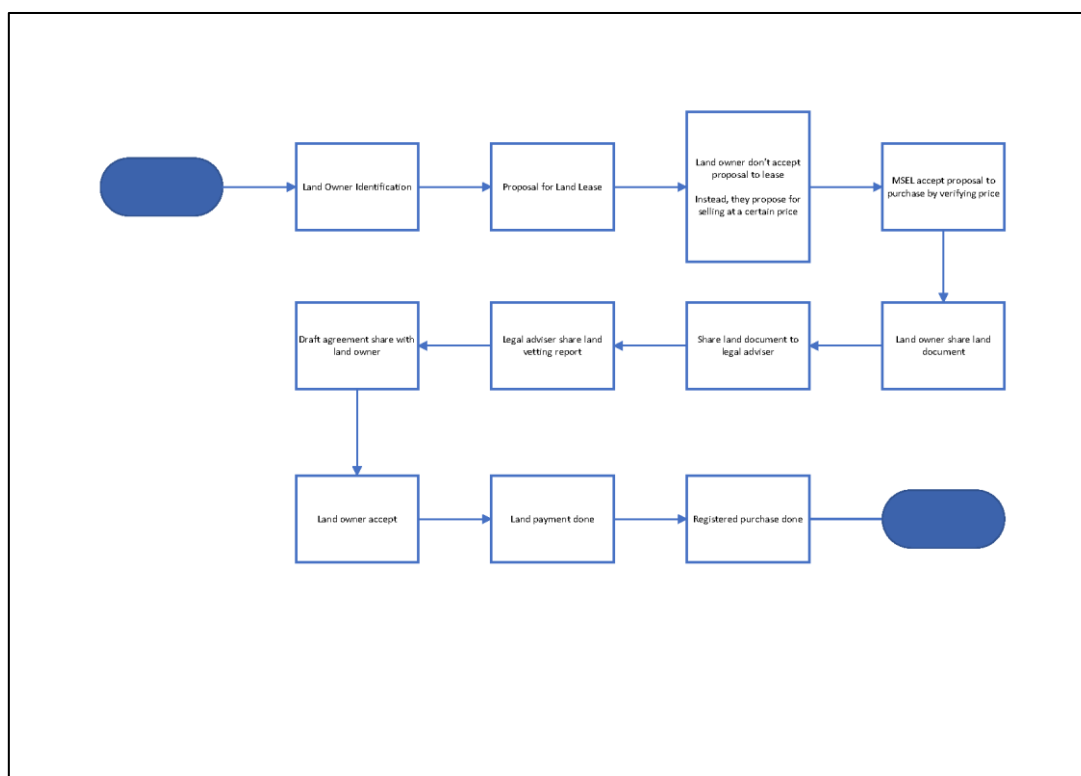
**Figure 4-38: Land Lease Execution Process**



According to MSEL, initially their primary objective was to lease all the land. They approached the landowners with leasing proposals in July 2022. However, some owners, due to family issues, preferred to sell their land instead and informed MSEL by July 2023. With no other option, MSEL agreed to purchase the land. The landowners proposed prices for their land, and MSEL determined the land value by verifying local rates and the mouza rate at the sub-register office.

MSEL then started to collect land documents from the respective landowners from September 2023. To verify the exact landowners, they also gathered documents from the government land office. These documents were shared with their legal adviser, who vetted them the documents by October 2023. After completing all the necessary paperwork, MSEL purchased the land through a registered agreement with the landowners, making the payments accordingly by May 2024. The land was purchased between BDT 15,000 TO BDT 30,000 per decimal, depending on the location and land characteristics. This is above market rate of BDT 10,000 to 15,000 per decimal. MSEL disbursed the land payment through both cash and bank transfer, according to the convenience of the landowners MSEL covered all costs associated with the land registration process. Some landowners had prepared their land for fish farming and invested their own money for this purpose before the land lease process began. The landowners requested compensation from MSEL for their investment in land development before they received their lease payment. MSEL agreed to their proposal and compensated them accordingly. Below Figure 4-39Figure 4-38 shows the land purchasing process of MSEL.

**Figure 4-39: Land Purchasing Process**



## 4.5 Applicability of ADB's Safeguard Requirement 2 – Involuntary Resettlement

The SPS-Involuntary Resettlement deals with project-related issues in land acquisition and involuntary resettlement. The policy applies to physical and/or economic displacement. The type of land-related transactions that trigger the policy vis-a-vis the position of the project on them are as follows.

**Table 4-15: Applicability of ADB's Safeguard Requirement 2**

Safeguard Requirement 2 – Involuntary Resettlement Trigger Requirements	Project Land Procurement Status
Land rights or land use rights acquired through expropriation or other compulsory procedures in accordance with the legal system of the host country	<b>Applicable</b> The land of MSEL is located at Nimuria Mouza under Muktagacha Upazila of Mymensingh Division. The total amount of the land is private land and owned by the local people. The proposed project started their land procurement and leasing process from 2022. The land requirement for the proposed project is 68 acres comprising the main plant area and auxiliary facilities such as warehouse and guard barrack. As per the discussions with landowner and local community, most of the land parcels are wetlands and few land parcels are single-cropped agricultural land as well as fisheries
Land rights or land use rights acquired through negotiated settlements with property owners or those with legal rights to the land if failure to reach settlement would have resulted in expropriation or other compulsory procedures	
Project situations where involuntary restrictions on land use and access to natural resources cause a community to lose access to resource usage where they have traditional or recognizable usage rights	

Safeguard Requirement 2 – Involuntary Resettlement Trigger Requirements	Project Land Procurement Status
<p>Certain project situations requiring evictions of people occupying land without formal, traditional, or recognizable usage rights</p>	<p>land. The project's establishment would result in a change in land use of the proposed project site from agricultural or beel to industrial for a limited period.</p> <p>No physical displacement has been conducted so far for the development of the proposed project. The direct resultant impact (adverse) of land use change in the project area is the reduction in land area available for agriculture &amp; fisheries and resultant livelihood impacts on landowners, agricultural labors</p> <p>The proposed project site is basically a wetland (Beel), whereas a minimum portion of land was used for agricultural and fish farming activities in the surrounding area. Approximately 40 to 50 farm workers and 10-15 fishpond workers (mostly migrant workers) were hired in these lands seasonally on daily basis contract. All of them have other income sources as they do not have permanent working opportunities in these lands.</p> <p>Moreover, the agricultural lands are single-cropped land, and the production rate is decreasing day by day. As a result, the agricultural laborers and the landowners are becoming reluctant to work in this area. On the other hand, those who worked in the fish farms were hired during the starting and ending period of fish farming on a daily basis contract. They usually work around two to three hours a day in these farms, and the rest of the time they are involved in other income generating activities.</p>

## 5 GAP ASSESSMENT, COMPLIANCE WITH APPLICABLE REFERENCE FRAMEWORK AND CLOSURE MEASURES

Based on the assessment of land procurement process and observations on Project's process alignment with ADB SPS requirement are summarized.

The compliance definition used in the assessment are as follows in the Table 5-1

**Table 5-1: ADB SPS Alignment Definitions**

Rating	Definition
<b>Aligned</b>	Information available indicates that the Project/Company fulfils the requirement and/or is aligned with intended outcome of the requirement.
<b>Partially Aligned</b>	Information available indicates that the Project/Company partially fulfils the requirement and/or is partially aligned with intended outcome of the requirement.
<b>Not Aligned</b>	Information available indicates that the Project/Company does not fulfil the requirement.
<b>Insufficient Information</b>	There is insufficient information to make an assessment of the level of alignment.
<b>Not Applicable</b>	The specific standard/requirement has limited or no applicability.

Table 5-2: Status of Compliance Evaluation

SL No	Requirements	Observations/ Findings/ Gaps	Level of Compliance	Mitigation Measures
<b>Safeguard Requirement 2 – Involuntary Resettlement</b>				
1.	Carry out meaningful consultation with affected persons, host communities and concerned non-government organizations ensuring their participation in planning, implementations, and monitoring and evaluation of resettlement programs	<ul style="list-style-type: none"> <li>During the land procurement and leasing process, MSEL conducted meaningful consultation with the affected persons, host communities and relevant stakeholders.</li> <li>A meaningful consultation has been conducted with the affected persons, host communities and relevant stakeholders during the preparation of IESE.</li> <li>A responsibility and monitoring schedule also mentioned in the SEP.</li> <li></li> </ul>	Aligned	•
2.	Establish a grievance redress mechanism (GRM) to receive and facilitate resolution of the affected persons' concerns	<ul style="list-style-type: none"> <li>As a part of IESE and LRP, A grievance redress mechanism has been prepared to receive and facilitate resolution of the affected persons' concerns.</li> <li>A sample of grievance register has been made available for review. However, no grievance was registered yet.</li> <li>To implement the grievance redress mechanism (GRM) to receive and facilitate resolution of the affected persons' concerns regarding land and other community issues MSEL should create a provision by installing grievance boxes in the community hot spots.</li> </ul>	Aligned	•
3.	Provide physically and economically displaced persons with needed assistance	<ul style="list-style-type: none"> <li>During the reconnaissance site visit and audit trial it was identified that no physical displacement will occur due to the lease and procurement of the land for MSEL.</li> <li>As discussed with the MSEL, landowner, land user, local elected member and community, the land was procured and leased by willing buying and willing selling procedure. The landowners are satisfied as per the</li> </ul>	Aligned	•



SL No	Requirements	Observations/ Findings/ Gaps	Level of Compliance	Mitigation Measures
		<p>given price compared to the market price. The proposed solar power plant project land is basically a wetland (Beel) (54.0%), whereas a minimum portion of land was used for agricultural (0.70%) and fish farming (45.30%) activities in the surrounding area. Approximately 40 to 50 workers (mostly migrant workers) were hired in these lands seasonally on daily basis contract. These people are seasonal farm workers and partially economically displaced. All of them have other income sources as they do not have permanent working opportunities in these lands. Moreover, the agricultural lands are single-cropped land, and the production rate is decreasing day by day. As a result, the agricultural laborers and the landowners are becoming reluctant to work in this area. On the other hand, those who worked in the fish farms (10 to 15 laborers) were hired during the starting and ending period of fish farming on a daily basis contract. These people are also partially economically displaced. They usually work around two to three hours a day on these farms, and the rest of the time they are involved in other income generating activities. Out of 55 surveyed landowners, 43 are at below poverty line as per WHO<sup>7</sup>. But, during the socioeconomic survey and site visit, it was found that – these people are not vulnerable. All of them have their own homestead lands. Moreover, all of them have additional land where they use to do agricultural and fisheries activities. So, they do not have</p>		

<sup>7</sup> Population below international poverty line, World Health Organization, [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/proportion-of-population-below-the-international-poverty-line-of-us\\$1-90-per-day-\(-\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/proportion-of-population-below-the-international-poverty-line-of-us$1-90-per-day-(-)), Last Accessed – 28/07/2024

SL No	Requirements	Observations/ Findings/ Gaps	Level of Compliance	Mitigation Measures
		<p>any house rent cost, moreover they get their paddy and fish supply from their own lands.</p> <ul style="list-style-type: none"> <li>• A LRP also developed to ensure and provide the assistance to the economically displaced persons.</li> <li>• Prioritize in terms of employment opportunity should be available for the affected landowners and land users.</li> <li>• An implementation schedule for the LRP has also been prepared. The LRP should be implemented according to this schedule. Additionally, the progress of the implementation should be monitored and reported regularly.</li> </ul>		
4.	Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets	<ul style="list-style-type: none"> <li>• During the site visit and consultation with the local community it was revealed that, approximately 40 to 50 agricultural labors (mostly migrant workers) and 10 to 15 fish farm workers without legal rights were affected due to the implementation of the project.</li> <li>• MSEL taken the initiative to identify land users and developed LRP to provide assistance and compensation.</li> </ul>	Aligned	
5.	Improve, or at least restore, the standards of living of the displaced poor and other vulnerable groups, including women through land bases resettlement strategies wherever possible, prompt replacement of assets, prompt compensation at full replacement cost and additional revenues and services through benefit sharing scheme where possible	<ul style="list-style-type: none"> <li>• MSEL have developed the LRP to Improve, or at least restore, the standards of living of the displaced poor and other vulnerable groups,</li> </ul>	Aligned	•

SL No	Requirements	Observations/ Findings/ Gaps	Level of Compliance	Mitigation Measures
6.	Prepare a resettlement plan elaborating on displaced persons entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget and time- bound implementation schedule	<ul style="list-style-type: none"> <li>As there are some partially economic displaced person (approximately 40 to 50 workers farmers and 10-15 fishpond workers)</li> <li>LRP has been developed by MSEL.</li> <li></li> </ul>	Aligned	
7.	Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholder	<ul style="list-style-type: none"> <li></li> <li></li> <li>MSEL Livelihood Restoration Plan (LRP) and Resettlement Framework and a schedule for disclosure.</li> </ul>	Partially Aligned	<ul style="list-style-type: none"> <li>LRP should be disclosed accordingly.</li> </ul>
<b>ADB Safeguard Requirement 3 – Indigenous People</b>				
8.	<b>Review of Indigenous Peoples Safeguards</b> Confirm that land procurement, construction and operation of project did/would not entail any impacts on indigenous peoples or ethnic minorities. Confirm presence and impacts, particularly if any indigenous peoples were affected by land procurement activities; avoidance of adverse impacts; meaningful consultation and informed participations; free, prior an informed	<ul style="list-style-type: none"> <li>Livelihood Restoration Plan (LRP) and Resettlement Framework</li> <li>There are no distinct and vulnerable Indigenous Peoples in the area that will be affected by the Project.</li> </ul>	Not Applicable	

SL No	Requirements	Observations/ Findings/ Gaps	Level of Compliance	Mitigation Measures
	consent of Indigenous People communities (as required for projects involving relocation of Indigenous Peoples or commercial use of natural resources, customary/ancestral/traditional lands under use by IP communities); Impacts on Ancestral, Traditional or customary lands under use; relocation of indigenous peoples from traditional or customary lands; customary resources			

## **6 CORRECTIVE ACTION PLAN**

### **6.1 Overview**

The findings of the compliance review have been used to identify required actions to achieve compliance with the reference framework ADB SPS, ADB's policy on Access to Information and ADB's Social Protection Strategy, 2001, ADB's Gender and Development Policy. This audit report presents an overarching project review that takes account of the full reference framework. In order to produce a readily management plan that clearly outlines all actions required to achieve compliance with ADB requirements a Corrective Action Plan (CAP) has been developed. This is presented below.

### **6.2 Corrective Action Plan**

This section presents the project Corrective Action Plan (CAP). This CAP is based on the Audit Team's understanding of the project documentation provided, project status at the time of auditing and writing the report, and requirements of the lenders moving forward. The CAP must be reviewed and amended in discussion between the lenders and MSEL to ensure that all parties are aware of the obligations imposed by the CAP and accept the obligations herein. Any changes to the project description or any of the documentation provided will require the CAP to be reviewed and amended if considered necessary. The implementation of the CAP is the responsibility of the MSEL.

The CAP has been organized to include the following:

- Proposed measures based on findings of the audit team's review and recommendations to achieve compliance with the reference framework
- Reference to the findings in the report
- Significance
- Recommended responsibility for implementing the action
- Deliverables that demonstrate the action has been completed
- Timelines for completion

**Table 6-1: Corrective Action Plan**

SL#	Aspect	Reference in the Report	Significance	Responsibility	Required Action	Deliverables	Suggested Timeline for Completion
Safeguard Requirement 2 – Involuntary Resettlement							
1.	Carry out meaningful consultation with affected persons, host communities and concerned non-government organizations	Table 5-2 SL 1	High	MSEL	<ul style="list-style-type: none"> <li>- Stakeholder Engagement program should be developed, implemented and monitored accordingly.</li> <li>- Documenting and disclosing of engagement activities and consultation</li> <li>- Project should provide training to the implementation department on the established SEP and the principles of SEP. Further, a refresher training program shall be prepared on providing training on SEP after a fixed interval of time.</li> <li>- Project should involve 3rd party monitoring of social aspects of implemented SEP</li> </ul>	<ul style="list-style-type: none"> <li>- Monitoring record of Stakeholder Engagement program</li> <li>- Documents on consultation</li> <li>- Training records, photo evidence and training module</li> <li>- Report of third part monitoring</li> </ul>	
2.	Establish a grievance redress mechanism (GRM)	Table 5-2 SL 2	High	MSEL	<ul style="list-style-type: none"> <li>- Development of a grievance redress mechanism, conduct of information dissemination on GRM, make available different means of communicating grievances, including having Adequate number of Grievance Boxes should be installed by MESL for both community and workers.</li> </ul>	<ul style="list-style-type: none"> <li>- Implementation evidence of installation of grievance box</li> </ul>	Prior to 1 <sup>st</sup> Disbursement
3.	Provide physically and economically displaced persons with needed assistance	Table 5-2 SL 3	High	MSEL	<ul style="list-style-type: none"> <li>- MESL should identify and provide assistance for the economically displaced persons.</li> </ul>	<ul style="list-style-type: none"> <li>- Implementation evidence of the mentioned topics</li> </ul>	

SL#	Aspect	Reference in the Report	Significance	Responsibility	Required Action	Deliverables	Suggested Timeline for Completion
	Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets				<ul style="list-style-type: none"><li>- Develop a livelihood restoration plan</li><li>- MSEL should take initiative to identify the land user without legal rights and provide assistance.</li></ul>		
4.	Prepare a resettlement plan elaborating on displaced persons entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget and time-bound implementation schedule	Table 5-2 SL 5	High	MSEL	<ul style="list-style-type: none"><li>- Same as SL# 14 of Table 6-1</li></ul>	<ul style="list-style-type: none"><li>- Same as SL# 14 of Table 6-1</li></ul>	Prior to 1 <sup>st</sup> Disbursement



## 7 CONCLUSION

This SCA is prepared in accordance with the ADB Safeguard Policy Statement (SPS), 2009, ADB Social Protection Strategy, 2001, ADB Gender and Development Policy, 1998, ADB Access to Information Policy, 2019, IFC Performance Standards on Environmental and Social Sustainability, 2012, World Bank Group/IFC EHS as well as applicable sector-specific Guidelines and applicable local and national environmental and social laws and regulations of Bangladesh.

The audit was conducted using a combination of methods including the use of checklists, observations, site surveys, photography, interviews with the management, staff, workers, and affected persons, and literature reviews of documented information.

From a socioeconomic perspective, the project brings about favorable outcomes. These encompass the generation of employment opportunities, enhancements to the local economy. Nonetheless, at this juncture in the project's development, several aspects require careful consideration to guarantee that the project attains acceptable social performance and sustainability.

Most of the issues were discussed in the earlier sections of this report and should be followed up and implemented.

## **APPENDIX**

## Appendix A: Photographs of Site Visit and Consultations



Consultation with the Local People/ Landowners



Visit to Site and Surrounding Area



Consultation with Local Upcoming Workforce



Consultation with Local People



Consultation with Businessowners



Consultation with Local School Teachers

## Appendix B: Land Vetting Document



Ref.: LJ/MHK-JIR-AI/MUKTAGACHA-(LV)/03/2024

Dated: March 31, 2023

Mr. Nuher Latif Khan  
Managing Director  
Joules Power Limited  
Colloid Centre 2<sup>nd</sup> Floor  
206/A Tejgaon Industrial Area  
Dhaka 1208  
Bangladesh

Mr. Md. Nahiduzzaman  
Lead Business Development  
Joules Power Limited  
Colloid Centre 2<sup>nd</sup> Floor  
206/A Tejgaon Industrial Area  
Dhaka 1208  
Bangladesh

Dear Sir,

**RE: VETTING OF PROPERTY DOCUMENTS: MUKTAGACHA SOLARTECH ENERGY LIMITED SITUATED IN MUKTAGACHA, MYMENSINGH (PROPERTY IN THE NAME OF MD. FARUQ HOSSAIN SON OF MD. ABDUL MOJID).**

Please refer to the captioned subject and the relevant documents referred to us on various occasions with the request to provide a land vetting on the same.

We have perused all the documents/papers (all photocopies) that you have referred to us and our opinion on the basis of the provided documents is as follows:

**Property in the name of:**

**Md. Faruq Hossain** son of Md. Abdul Aziz & Rashida Begum of Vill.: Nimuria, P.O. Ghoga, P.S: Muktagacha, District: Mymensingh, NID 6116577972711

- Description of property** : All that piece and parcel of the land measuring 18.00 (eighteen point zero zero) decimals situated within District: Mymensingh, Upazila & Sub-Register: Muktagacha, J.L. No. 155, Mouza: Nimuria, under the following dag and khatian number:

**LAW OFFICES**

Gulshan Branch – Flat #601 & 602 (5th Floor), House# 106, Road# 102, Block# D, Niketan, Gulshan-1, Dhaka-1212. High Court Room: 5029 Annex (4<sup>th</sup> Floor), High Court Bar Association Building, Dhaka; District Court-Jawahar Complex, Room No. – 413 (2<sup>nd</sup> Floor), 14 Court House Street, Judge Court, Dhaka

**LEX JURIS**

## Continuation Sheet

Sl. No.	Title deed number and date	Khatian number			Dag number		Area of land (in decimals)
		S.A.	BRS	Mutation	S.A.	BRS	
1.		148	202		1070	3801	18.00
Total							18.00

which is butted and bounded by:

On the North :  
 On the South :  
 On the East :  
 On the West :

2. **Area** : Total land measuring 18.00 (eighteen point zero zero)
3. **List of Documents submitted** :
  1. Submitted photocopy of the certified copy of S.A Khatian No. 28;
  2. Submitted photocopy of the certified copy of B.R.S. Khatian No. 202;
  3. Photocopy of National ID in the name of Md. Faruq Hossains;
  4. Submitted photocopy of the Succession Certificate in the name of Md. Faruq Hossains.
4. **Title Deed referred** : B.R.S. Khatian No. 202.
5. **Bia Deed referred** : Not Submitted.
6. **Mutation** : Not submitted.
7. **Khatian** :
  1. Submitted the certified copy of S.A Khatian No. 28;
  2. Submitted the certified copy of B.R.S. Khatian No. 202.
8. **Chain of Ownership** : *Please note that without perusing all the documents we are unable to draw the actual chain of ownership. However from submitted documents the following chain can be drawn:*  
  
 From submitted S.A Khatian No. 28, it appears that land measuring 28.00 decimals under Dag No. 1070 was recorded in the names of 01. Ahammad Ali, 02. Mojibor Rahman son of Hazi Rejob Ali & 03. Roymonor Bewa wife of Hazi Rejob Ali.



# **LEX JURIS**

## **Continuation Sheet**

From submitted B.R.S. Khatian No. 202, it appears that land measuring 18.00 decimals under Dag No. 3801 along with other daags has been recorded in the name of Abdul Mojid son of Hazi Rojob Ali.

Later on after the demise of Abdul Mojid son of Hazi Rojob Ali the respective land was inherited by his successors including Md. Faruq Hossain.

Please note that under S.A Khatian No. 28 why Abdul Mojid is not the recorded tenant with 01. Ahammad Ali, 02. Mojibor Rahman whereas all they are the successors of Hazi Rojob Ali, please clarify.

Further to the above partition deed among the successors of Abdul Mojid should be obtained from the present land owner.

- |  |   |   |
|--|---|---|
| 9. <b>Ground Rent</b>                    | : | Not Submitted.  |
| 10. <b>Valuation</b>                     | : | Not Submitted.  |
| 11. <b>Non-Encumbrance Certificate</b>   | : | Not Submitted.  |
| 12. <b>Municipal Holding Tax receipt</b> | : | Not Submitted.  |
| 13. <b>Wanting papers</b>                | : | <ul style="list-style-type: none"> <li>• Clarifications as has been sought out as above;</li> <li>• Partition Deed</li> <li>• Up to date Land Developments tax payment receipt in the name of Md. Faruq Hossain for the land propose to be rented in favour of Joules Power Limited;</li> </ul>   |
| 14. <b>Opinion</b>                       | : | On basis of the submitted documents and above-mentioned comments/observations, we are of the opinion that Md. Faruq Hossain has acquired prima facie right title and ownership over the land measuring 18.00 decimals subject to obtaining the required papers/documents mentioned above. It is also required to confirm the actual possession of the current landowners over the subject land. |

According to provided information, Joules Power Ltd. is willing

**LEX JURIS**

**Continuation Sheet**

to rent out the subject land to serve its purpose. To rent the land properties we would suggest the following:

1. Collect all the required documents;
2. Check all the documents to confirm authenticity;
3. Determine the relevant B.R.S. Dags and accordingly relevant B.R.S. and S.A. khatians;
4. Check possession of the land;

We also would suggest to do the field works through logistics and manpower solely appointed/designated by Joules Power Ltd.

Please note that we have prepared and provided this opinion on the land properties solely for the purpose of lease out of the land property. Should Joules Power Ltd. holds any other intention regarding the land property, we request to instruct us accordingly as the opinion concerning the subject land may vary regarding obtaining of further/additional papers/documents.

If you have any further query, please do not hesitate to revert back to us.

All documents/papers referred to us are returned herewith.

Thanking you.

Yours faithfully,

(Md. Mydul H. Khan)  
Barrister-at-law

(Kazi Jahirul Islam)  
Advocate, Supreme Court of Bangladesh

[illegible]



**Appendix D: List of Affected Person**

SI No	Name	Occupation	Type Of Losses	Type of Land taken
1		Commercial Business, Shop Etc.	Land	Lease
2		Service	Land	Lease
3		Service	Land	Lease
4		Commercial Business, Shop Etc.	Land	Lease
5		Commercial Business, Shop Etc.	Land	Lease
6		Farming	Land	Lease
7		Farming	Both (Land and Livelihood)	Lease
8		Farming	Land	Lease
9		Farming	Land	Lease
10		Farming	Land	Lease
11		Farming	Both (Land and Livelihood)	Lease
12		Farming	Land	Lease
13		Farming	Land	Lease
14		Farming	Land	Lease
15		Farming	Land	Lease
16		Farming	Land	Lease
17		Farming	Both (Land and Livelihood)	Lease
18		Commercial Business, Shop Etc.	Land	Lease
19		Farming	Land	Lease
20		Commercial Business, Shop Etc., Farming	Land	Lease
21		Commercial Business, Shop Etc.	Land	Lease
22		Service	Land	Lease
23		Commercial Business, Shop Etc.	Land	Lease
24		Daily Labor	Land	Lease
25		Farming	Land	Lease
26		Farming	Both (Land and Livelihood)	Lease
27		Farming	Land	Lease
28		Farming	Land	Lease
29		Farming	Land	Lease
30		Farming	Land	Lease
31		Commercial Business, Shop Etc.	Land	Lease
32		Farming	Land	Lease
33		Farming	Both (Land and Livelihood)	Lease
34		Farming	Both (Land and Livelihood)	Lease
35		Farming	Land	Lease

SI No	Name	Occupation	Type Of Losses	Type of Land taken
36		Service	Land	Lease
37		Teacher	Land	Lease
38		Farming	Land	Lease
39		Farming	Land	Lease
40		Farming	Both (Land and Livelihood)	Lease
41		Farming	Land	Lease
42		Farming	Land	Lease
43		Commercial Business, Shop Etc., Farming	Land	Lease
44		Farming	Land	Lease
45		Farming	Land	Lease
46		Unpaid Family Work/ Housewife	Land	Purchase
47		Service	Land	Lease
48		Farming	Land	Lease
49		Farming	Land	Lease
50		Commercial Business, Shop Etc., Farming	Land	Lease
51		Commercial Business, Shop Etc., Farming	Land	Lease
52		Commercial Business, Shop Etc.	Land	Lease
53		Commercial Business, Shop Etc.	Land	Lease
54		Commercial Business, Shop Etc.	Land	Lease
55		Farming	Both (Land and Livelihood)	Lease
56		Agricultural Labor	Livelihood	NA
57		Agricultural Labor	Livelihood	NA
58		Agricultural Labor	Livelihood	NA
59		Agricultural Labor	Livelihood	NA
60		Commercial Business, Shop Etc., Fish Farm Worker	Livelihood	NA
61		Agricultural Labor	Livelihood	NA
62		Farming	Livelihood	NA
63		Farming	Livelihood	NA
64		Farming	Livelihood	NA
65		Farming	Livelihood	NA
66		Farming	Livelihood	NA
67		Farming	Livelihood	NA
68		Farming	Livelihood	NA
69		Driver, Fish Farm Worker	Livelihood	NA
70		Farming	Livelihood	NA
71		Farming	Livelihood	NA
72		Daily Labor, Agricultural Labor	Livelihood	NA
73		Agricultural Labor	Livelihood	NA

**Draft Report**


**Social Compliance Audit of Muktagacha Solartech Energy Limited at Muktagacha, Mymensingh**

<b>SI No</b>	<b>Name</b>	<b>Occupation</b>	<b>Type Of Losses</b>	<b>Type of Land taken</b>
74		Daily Labor	Livelihood	NA
75		Daily Labor	Livelihood	NA
76		Farming	Livelihood	NA

## Appendix E: Sample Copy of Land Leasing Documents

**গণপ্রজাতন্ত্রী বাংলাদেশ সরকার**

৳১০০



৳১০০

**একশত টাকা**

খত ০০০৫৫০০০

**জমির ভাড়া হুজিপুর**

বিসমিল্লাহির রাহমানির রাহীম।

অন্য ---, ২০২০ ইং তারিখ অত্র জমির ভাড়া হুজিপুর স্বাক্ষরিত হইল।

মুদ্রাঙ্কিত প্রতিলিপি

**ভাড়া হুজিপুরের সার সংক্ষেপঃ**

মৌজার নাম	জমির রকম	থানা/উপজেলা	জেলা
নিমুদিয়া ও রঘুনাথপুর	নামা	মুন্সিগঞ্জ	ময়মনসিংহ
ভাড়া প্রাপ্ত জমির পরিমান (শতাংশ)		ভাড়ার হার (প্রতি শতাংশ)	বাবসারিক মোট ভাড়া
(নিমুদিয়া মৌজার ৭৮.০০ শতাংশ ও রঘুনাথপুর মৌজার ২৬.০০ শতাংশ মোট ১০৪.০০ (একশত চার দশমিক ওদ্য অন্য) শতাংশ		৪৬১.০০	৪৭,৯৪৪.০০

**প্রথম পক্ষ/ভাড়া দাতা/দাতাগণের নাম ও ঠিকানা :**

নাম :	আফরোজা আক্তার সুনু	সত্যায়িত ছবি
পিতার নাম :	মরহুম আলহাজ্ব মোঃ আফতাব উদ্দিন আকন্দ	
মাতার নাম :	নাসিমা আক্তার চামেলী	
স্বামীর নাম :	মোহাম্মদ আলিজুল হক	
বয়স/জন্ম তারিখ :	২৮.১১.১৯৮২ ইং	
জাতীয়তা :	বাংলাদেশী	
ধর্ম :	ইসলাম	
পেশা :	চিকিৎসক	
এন.আই.ডি. নম্বর :	৬১২৫২০৪৬৬৪২৬০	

**স্থায়ী ঠিকানা** : নিমুদিয়া, পোঃ খোলা-২২১০, থানাঃ মুন্সিগঞ্জ, জেলাঃ ময়মনসিংহ।

**বর্তমান ঠিকানা** : ১৫২/১ গোহাইল কানি, ময়মনসিংহ সদর, ময়মনসিংহ।

পাতা : ১

“দেশপ্রেমের শপথ নিন, দুর্নীতিকে বিদায় দিন”