

Environmental and Social Impact Assessment of Pioneer Knit wears (BD) Ltd

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Abstract

This Environmental & Social Impact Assessment (ESIA) has been prepared as part of the environmentally sound study for Pioneer Knitwear (BD) Ltd. Pioneer Knitwear (BD) Ltd is a 100% export oriented readymade Sweater garment factory situated at Zamirdia, Valuka, Mymensingh, Bangladesh. The objective of the study is to help Pioneer Knitwear (BD) Ltd to prepare an Environmental & Social Impact Assessment report suitable for Environmental vision. The Project dreams to make a Sustainable Sweater Manufacturing unit which will save energy and act as socially responsible.

This ESIA study has been prepared based on field investigations, coordination with Pioneer Knitwear (BD) Ltd personnel, requirement of law from Department of Environment (DoE) and buyers' requirement. The Environmental & Social Impact Assessment study report has been prepared for this project based on Winter season (Mid November to December) baseline environmental quality data in the project area. Identification and predication of significant environmental impacts due to existing factory along with Environmental & Social Impact Statement followed by delineation of appropriate Environmental Management Plan are included in ESIA Report. This report covers the description of existing environmental conditions; assessment of environmental impacts of the Sweater knit manufacturing unit based Knit manufacturing operation, recommended mitigation measures and environmental monitoring plan. The environmental impact was considered for activities during various kinds of operational activities of the project to satisfy the Department of Environment that it meets with the requirement of law.

As 100% export oriented Sweater garments manufacturing projects are identified as having the potential for environmental impact; According to ECR 19 Rules of 1997 (Schedule 1, Clause C, item 61) [Page 200] it falls under Orange-B category. As such, an Environmental & Social Impact Assessment (ESIA) is required. Environmental & Social Impact Assessment (ESIA) is one of the proven tools of facilitation to achieve the goal of environmentally and socially sound and sustainable development.

It can be safely said that the environmental impacts of the existing Pioneer Knitwear (BD) Ltd. premises has been kept minimized to an acceptable level in order to meet the Bangladesh Environmental Standards.

Keywords—Climate, GHG Emissions, Energy Consumption, Climate Change Mitigation Measures, Indigenous Knowledge, etc.

1.1 INTRODUCTION

Pioneer Knitwear (BD) Ltd is a Public Limited Company; operating its business since 2010s as 100% Export Oriented Sweater Composite unit with Textile and RMG Sector. Pioneer Knitwear (BD) Ltd is a sister concern of Badsha Group. The factory produces high quality garments products for some prominent brands / Customers.

- Total Jacquard Machine = 1,800 pcs,
- Total Linking Machine = 2860 pcs.
- It employs about 8,460 workers and officers in this unit.
- The total production capacity of this factory is =1,350,000 pcs/ Monthly.
- It earns = 105 Million US\$/Year which is huge contribution in the national economy.
- The total land area is registered around of = 105 Bigha.
- The plants share a power generation facility of 2.0 MW Gas fueled generator (02 pcs), 20 ton boiler (03 pcs) & 10 m3/hour Effluent Treatment Plant for full purification of waste water.

Pioneer Knitwear (BD) Ltd is a 100% export oriented readymade Sweater garment factory situated at Zamirdia, Valuka, Mymensingh, Bangladesh. **According to ECR 19 Rules of 1997 (Schedule 1, Clause C, item 61) [Page 200] it falls under Orange-B category.**

The proposed area of the industry is located in the vacant land occupied by an enterprise of Badsha Group. The proponent is willing to expand the factory both vertically and horizontally.

1.2 PROJECT BACKGROUND

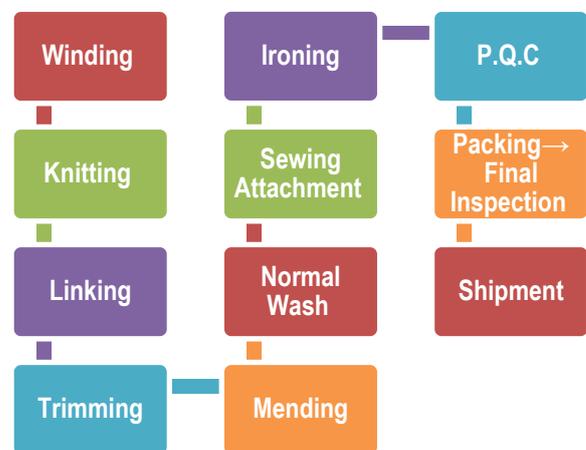
Pioneer Knitwear (BD) Ltd is one of the new generation manufacturer and exporter of washing products. Its product range children, men's & ladies Outerwear. It started exporting from 2010s.

It has expanded its business to various regions in Asia, Europe, USA.

Its motto is to establish as a reputable apparel manufacturer that is committed to customer's satisfaction, by producing high quality products, making on time shipment and delivering efficient & Quality services.

Pioneer Knitwear (BD) Ltd is a modern and state of the art horizontally integrated Sweater manufacturing unit.

Figure 1: Process Flow chart



1.3 AIMS & OBJECTIVES OF THE ESIA STUDY

- To Present a general description of the project and the existing environment;
- Identification of significant adverse impacts to the environment;
- Mitigation measure to adverse impacts;
- An Environmental Management Plan for the current industry;
- The objective of this study is to provide an examination and assessment of the major environmental & social impacts to be created during its construction and operation phase.

1.4 PRINCIPLE OF ESIA

There are eight guiding benefits that given this entire process of ESIA and they are as follows:

- **I). Transparency:** All assessment elements and their basis should be open and accessible.
- **II). Certainly:** The process and timing of the assessment should be agreed in advanced and followed by all participations.
- **III). Participation:** An appropriate and timely access to the process for all interested parties.
- **IV). Practically:** The information and outputs provided by the assessment process are readily usable in decision making and planning.
- **V). Flexibility:** The assessment process should be able to adapt to deal efficiently with any proposal and decision making situation.
- **VI). Cost -Effectiveness:** The assessment process and its outcome will ensure environmental protection of the least cost to the society.
- **VII). Credibility:** Assessment undertaken with professionally and objectivity.
- **VIII). Accountability:** The decision maker are responsible to all parties for their action and decisions under the assessment process.

1.5 ESIA PROCESS

Section 12 of the Environmental Conservation Act 1995 stipulates "No industrial unit or project shall be established or undertaken without obtaining environmental clearance from the Director General of the DoE in the manner prescribed by the Environmental Conservation Rules (ECR) 1997.

The whole ESIA of this factory has been undertaken with DOE guideline & complying National & International Regulation.

Characterizing the baseline situation, focusing on the aspects of the baseline situation likely to be

affected by the proposed activity, or upon which the activity depends for its success.

1.6 BENEFIT OF ESIA

- ESIA ensures that the potential problems are foreseen and addressed at an early stage in project planning and design.
- Environmental & Social Impact Assessment (ESIA) system conform socio-economic development projects to environmental safety and thereby ensure sustainable economic development.
- A process for predicting and assessing the potential environmental and social impacts of a proposed project, evaluating alternatives and designing appropriate mitigation, management and monitoring measures.
- Social Impact Assessment (SIA) is the process of identifying and managing the social impacts of industrial projects. ESIA is used for local communities and broader society.

2.1 THE ENVIRONMENTAL CLEARANCE PROCEDURES IN BANGLADESH

The environment clearance process in Bangladesh has three main tiers:

- **I). Screening :** Bangladesh follows a normative screening process. Accordingly, industries have been divided into four categories: Green, Orange (A), Orange (B) and Red. According to the Environment Conservation Rules (1997) ,Red category projects are required to undertake both IEE and ESIA.
- **II). Initial Environmental Examination (IEE) :** All Textile fabric Processing projects are required to conduct an IEE. The DoE recommends the following steps for undertaking an IEE:
 - Collection of baseline information with respect to the project and the environmental

- ✚ setting of the project site.
- ✚ Setting of the boundaries of the IEE by identifying the significant issues.
- ✚ Impact assessment, suggesting mitigation measures, environmental management plan or alternative sites or other project modifications.
- ✚ Preparation of an IEE report for submission to DoE.
- ✚ Review of the report by DoE.

- **III). Detailed Environmental Impact Assessment EIA :** The ESIA study should be focused on addressing the issues that had remained unresolved during the IEE exercise. The steps recommended by the department for conducting an ESIA are:

- Baseline studies,
- Impact identification,
- Impact prediction,
- Impact evaluation,
- Mitigation measures,
- Monitoring program.

Screening decides whether the EIA process should be applied to a development project.

2.2 METHODS & MATERIAL

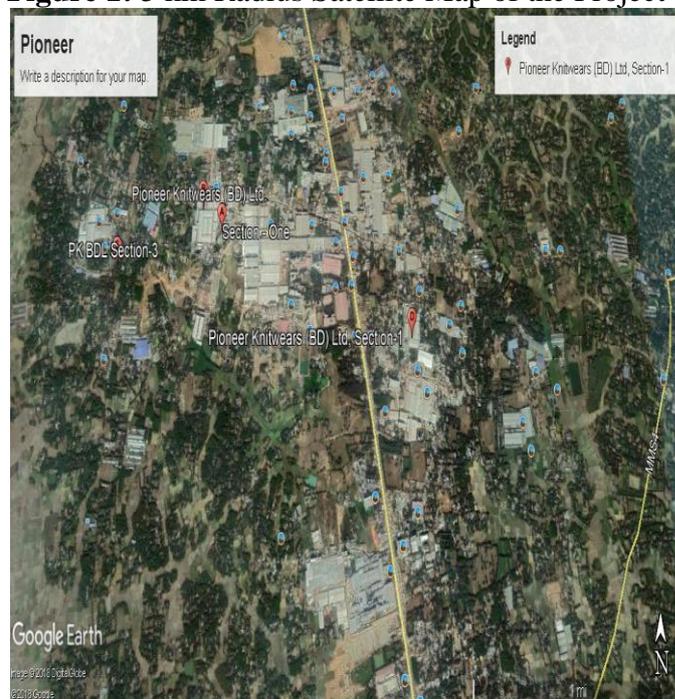
- The study was conducted by secondary data sources & Field observation.
- Impact identification methods:- Checklists, Matrices, Networks & Environmental Evaluation System (EES).
- Field observation & Questionnaire survey among the industrial community.

3.1 GEOGRAPHY & SOIL

Bhaluka has a total area of 444.05 km². It is bounded by Fulbaria and Trishal Upazilas on the north, Sreepur Upazila on the south, Gaffargaon Upazila on the east and Sakhipur and Ghatail Upazilas on the west. The main rivers are Sutia, Khiru, Lalti, and Bajua. The district covers an area of 4363.48 km², with several small valleys between high forests. The temperature ranges from 12 to

33 °C, and the annual rainfall averages 2,174 mm. It is at the foot of Garo hills of Meghalaya, and includes some chars (sandy islands) founded on the bed of the Old Brahmaputra River and also some ancient forests of mainly a single wood tree, the sal tree. The city of Mymensingh stands on the bank of the Old Brahmaputra, as the 1897 Assam earthquake changed the main flow from Brahmaputra to the Jamuna River which flows west of the greater Mymensingh region. After about hundred years, a port city of sea vessels from England lost its status as the river became a seasonal flow. Some former residences of colonial officials along the side of the river in the city are nowadays government buildings. The area of Greater Mymensingh, the north front line is just at the foot of Garo hills of Meghalaya of India, the south this area excludes The Gazipur District, the east ends in the rich watery land of Bangladesh as native calls 'Hawor', the west ends in the ancient single wood forest (e.g. Muktagacha, Fulbaria and Valuka Upazillas) and the Chars of Jamalpur District sided north-west of Mymensingh district.

Figure 1: 5 km Radius Satellite Map of the Project



3.2 BASELINE DATA COLLECTION

The term "baseline" refers to the collection of background information on the biophysical, social and economic settings proposed project area. Normally, information is obtained from secondary sources, or the acquisition of new information through field samplings, interviews, surveys and consultations with the public. The task of collecting baseline data starts right from the period of project inception; however, a majority of this task may be undertaken during scoping and actual EIA.

Baseline data is collected for two main purposes:-

- I). To provide a description of the current status and trends of environmental factors (e.g., air pollutant concentrations) of the host area against which predicted changes can be compared and evaluated in terms of significance, and
- II). To provide a means of detecting actual change by monitoring once a project has been initiated. Only baseline data needed to assist prediction of the impacts contained in the ToR and scoping report should be collected.

3.3 RESULT & DISCUSSION

Table: 3.1, Yearly Power Consumption of 2018

Month	Generator	REB	Boiler
January	122300 KW	22260 KW	164691.26 m3
February	369300	16695	160444.76
March	646000	16165	154852.05
April	857500	9805	230879.39
May	861000	4770	245758.3
June	664700	14045	214482.72
July	911600	3710	337086.37

August	838400	2385	263884.65
September	786200	2915	216648.36
October	756100	2725	193628.3
November	646200	16255	150414.56
December			
Total=	7459300 KW	111730 KW	2332770.72 m3

Yearly Power Consumption Graph of 2018

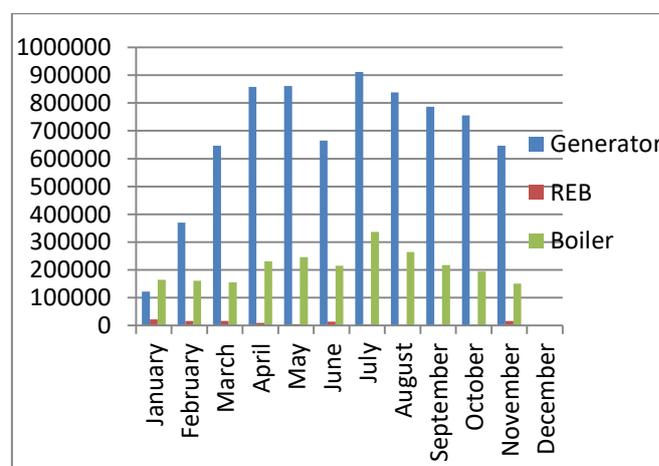


Table: 3.2, Light Level Assessment Report of Indoor Workplace:

Section	Obtain Result in Lux	BNBC 2006 Guideline standards (lux)	Remark
Washing	344 \geq	300-700	Accept.
Finishing	329\geq	450-1500	Low Light
Embroidery	547 \geq	300-700	Accept.
Printing	310 \geq	300-700	Accept.
Transformer	93	50-200	Accept.
Generator	131	50-200	Accept.
Boiler	146	50-200	Accept.
Jacquard	350	300-700	Accept.
Linking	581	300-700	Accept.

Reference: BNBC 2006 Guidelines chapter 1, part 8, table (8.1.5, 8.1.7, 8.1.9 & 8.1.10).

Comments: The work place Light condition has found satisfactory in most of the sections in comparison to the ambient Light Level Standard. **According to the Bangladesh National Building Code 2006 in Chemical Room, Bonded Warehouse & Store Rooms are not allowed to electricity connection.** It is highly recommended that if authority wants to enter these places please bring a torch or spot lamp to avoid undesirable firing.

Table: 3.3, Temperature Level Assessment Report

Section	Obtained Result in (°C)	Comparative Standard
Washing	31.6	20 °C - 32 °C
Finishing	31.1	20 °C - 32 °C
Embroidery	31.2	20 °C - 32 °C
Child Care	31.2	20 °C - 32 °C
Winding	31.8	20 °C - 32 °C
Printing	29.3	20 °C - 32 °C
Transformer	30.1	20 °C - 32 °C
Generator	32	20 °C - 32 °C
Boiler	32	20 °C - 32 °C
Jacquard	31.8	20 °C - 32 °C
Linking	31.1	20 °C - 32 °C
Compressor	31.1	20 °C - 32 °C

OSHA Guideline :	30.0 °C = Continuous Work.
	30.6 °C = 75% Work, 25% Rest per hour.
	31.4 °C = 50% Work, 50% Rest per hour.
	32.2 °C = 25% Work, 75% Rest per hour.

Comment: The workplace Temperature level at most of the sections of the factory has been found

satisfactory according to Bangladesh weather condition. However it is recommended that **suitable ventilation and thermal insulation of heat source could be provided to reduce temperature level.**

Table: 3.4, Noise Level Test Report of Indoor Workplace

Section	Standard Noise Level (Decibel)	Obtained Result (Day time only)	PPE Use
Finishing	Below 75 dB	66.7	No Need
Embroider	Above 75 dB	75.6	Ear Plug
Winding	Above 75 dB	76	Ear Plug
Generator	Above 90 dB (OHAS)	93.3	Ear Plug
Boiler	Above 90 dB (OHAS)	90.1	Ear Plug
Jacquard	Above 75 dB	77.3	Ear Plug

Comparative Standard (dB)	Industrial areas	Residential areas
Department of Environment (DoE)	75 dB at day time	55 dB at day time
Department of Environment (DoE)	70 dB at day time	55 dB at day time

Reference: ** ECR 1997 Recommendation Value is 75 Decibel.
 ** World Bank Recommended value (dBA) for 8 hours exposure (Indoor work place area 85 decibel.
 ** Occupational Safety and Health Administration (OSHA) Standard is 90 Decibel.

Comment: The work place noise level has found satisfactory in most of the sections in comparison to the Ambient Noise Quality Standard. However, as the measured noise level of Generator, Boiler, some Jacquard / Auto machine, Embroidery & Winding Section exceeded the ambient Noise level standard, it is recommended that ear muffs / ear plugs should be provided accordingly to related workers in the bold marking section to avoid occupational health hazard.

Table: 3.5, Stack Air Emission Test Report of Generator

Parameter	Generator No:- 1	Generator No:- 2
SPM ($\mu\text{g}/\text{m}^3$)	114	129
SO ₂ ($\mu\text{g}/\text{m}^3$)	17.79	16.89
CO($\mu\text{g}/\text{m}^3$)	381	388
NO _x ($\mu\text{g}/\text{m}^3$)	78	67

Permissible Limit as Per “The Bangladesh Environment Conservation Rules 1997” Schedule No. 2”	Suspend ed Particulate Maters	SO ₂	CO	NO _x
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
	500	120	5000	100

Comment: The stack emission from the stack point of generator has been analysed for the parameter of NO_x, CO, SO₂, and SPM to evaluate the effect of the plants emission while running on 100% Diesel on the air environment. **It is observed that the emission of these parameters is within the standard limit of DOE, US EPA and World Bank that does not provide harmful effect on the air environment and but cautious to human health when exposed for long time. So it is recommended that gas mask should be provided to related workers to avoid occupational health hazard.**

Table: 3.6, Stack Air Emission Test Report of Boiler

Parameter	Boiler No:- 1	Boiler No:- 2
SPM ($\mu\text{g}/\text{m}^3$)	89	102
SO ₂ ($\mu\text{g}/\text{m}^3$)	24.02	22.07
CO($\mu\text{g}/\text{m}^3$)	475	784
NO _x ($\mu\text{g}/\text{m}^3$)	17	57

Permissible Limit as Per “The Bangladesh Environment Conservation Rules 1997” Schedule No. 2”	Suspend ed Particulate Maters	SO ₂	CO	NO _x
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
	500	120	5000	100

Comment: The stack emission from the stack point of Boiler has been analysed for the parameter of NO_x, CO, SO₂, and SPM to evaluate the effect of the plants emission while running on 100% Diesel on the air environment. **It is observed that the emission of these parameters is within the standard limit of DOE, US EPA and World Bank that does not provide harmful effect on the air environment and but cautious to human health when exposed for long time. So it is recommended that gas mask should be provided to related workers to avoid occupational health hazard.**

3.4 TERRESTRIAL HABITAT (Flora, Fauna & Aquatic Fauna)

- **Terrestrial Flora :** Terrestrial flora is classified according to its habitat. Several local and foreign species have been identified in the surrounding environment of this project area. Maximum of the species are locally planted by the authorities and there are few naturally growing species of herbs and shrubs. In the project area,

terrestrial floras are present mainly in the home stead regions, roadsides, village groves, playgrounds high cultivated lands. Human being as well as wildlife uses these flora species for different purposes. They play an important role in the socio-economic and ecological balance. From a rapid field survey covering different terrestrial habitats of the project area, a number of flora species have been identified as Aam Gach, Devdaru Gach, Gate Ful, Gojari Gach, Golap, Kathal Gach, Mehguni Gach, Narikel Gach, Peyara Gach, Shegun Gach, Taal Gach.

- **Terrestrial Fauna :** Bangladesh is situated within the subtropical belt and has a wide variety of ecological conditions. In addition to a long sea coast, numerous rivers and their tributaries, lakes, haors, baors, ponds and other forms of wetlands, there are lowland evergreen forests of tropical nature, semi-evergreen forest, hill forests, moist deciduous forests, swamps, and flat lands with tall grasses. Because of expansion of agriculture and industry many original vegetation of most areas have lost their original characteristics and ecological features, which affected the fauna community of the country. To mitigate this challenge this industrial project authority has put an urge to conserve the natural habitats of fauna in surrounding. Wildlife that fully depends on the terrestrial ecosystems for life, shelter, food and breeding is called terrestrial fauna. A number of terrestrial fauna species have been identified during the brief and rapid assessment in the project area.
- **Aquatic Fauna :** Wetland indicates low-lying ecosystem where the ground water table is always at or near the surface. It includes areas of marsh, fen, bog, floodplain, and shallow coastal areas. Wetland is

divided into estuarine and freshwater systems, which may be further subdivided by soil type and plant life. Wetland area is characterized by sluggish or standing water that can create an open water habitat for wildlife. In this survey there are two types of wetland namely permanent wetland and seasonal wetland. This wetland area is merely polluted with industrial waste. As a result there are very few number of locally cultivated species as like Magur, Pangash, Talapia, Shing etc. fishes are available in this wetland area.

4.1 PUBLIC CONSULTATION

Public consultation is a means of involving all primary and secondary stakeholders in the project's decision-making process in order to address their concerns, improve project design, and give the project legitimacy. Public consultation, if conducted in a participatory and objective manner, is a means of enhancing project sustainability.

Community input (both of knowledge and values) on socioeconomic and environmental issues can greatly enhance the quality of decision-making. Public consultation was therefore conducted in the project area not only to satisfy the legal requirements of the ESIA process in Bangladesh but also to improve and enhance the social and environmental design of the project.

In the consultation process for ESIA, following key stakeholders were consulted:

- Local communities, Men, women and local elders attended meetings.
- Local Government & NGO representatives.

Meetings with stakeholders consisted of community consultation meetings, focus group discussions, and in-depth interviews with men and limited focus-group discussions with women.

4.2 COMMUNITY CONCERNS PROJECT APPROVAL

The community consultations demonstrated that goodwill towards the project proponents indeed exists; approval for project activities by the communities was evident. The consultations were considered a good gesture and appreciated, especially by the men and women. The poverty level is such that communities are looking to any project proponent to improve their financial well-being to a great extent. Pioneer Knitwear (BD) Ltd recognizes that benefits from the project should be distributed judiciously and equitably especially among primary stakeholders in the project area, and will continue to ensure that this principle is followed in its projects and community development program.

Local Employment :

Communities in the project area emphasized that local people should be given priority when employing people for various project-related works and activities according to their skills.

Interaction with Local Community :

Non-Local work force coming in the project area that will not be aware of the local customs and norms, may result in conflicts with the local community, keeping in mind the sensitive law and order situation and culture of the area.

Table 4.1: Concerns Raised by the Communities during Public Consultations

Concern Raised by the Community	Communities' Remarks
Provision of semi-skilled and unskilled jobs for the local labour	Maximum unskilled jobs should be allocated to the locals.
Existing facilities may be damaged by during construction activity.	Project authority should reconstruct the Existing facilities in a regular basis.

5.1 GENERAL CONSIDERATION

As in the case of most industrial projects, potential negative impacts are far more numerous than beneficial impacts. Though regional and national economic benefits associated with the implementation of any development project are considered to fall outside the scope of an ESIA, they are also considered here. It is fully recognized that the long-term benefits will ultimately contribute to an improvement in the quality of life.

Likewise, the indirect benefits of strengthening of technical capabilities of local persons through association with the foreign experts and other training elements, which may form part of a project, have been considered to fall outside the scope of ESIA.

5.2 IMPACT DURING OPERATION STAGE

Operation of the project may potentially affect quality of life, air, noise, water, land and flora, fauna and human by increase in air, noise and water pollution, increase in hazardous waste generation, pollution from spillage/surface runoff, disturbance to flora and fauna, by loss of trees resulting from increased assess, increase in land values, threatening agriculture, etc.

Environmental issues during the operational phase primarily include the following:

- Air emission (Minor)
- Noise generation (Minor)
- Hazardous waste generation (Minor)
- Water use and waste water discharge (Significant)
- Health and Safety

An in-depth analysis of each of the potential negative impacts is as follows.

5.3 PROPOSED MITIGATION MEASURES FOR NOISE NUISANCE MANAGEMENT

- ✓ Noisy construction works to be limited to daytime hours
- ✓ Immediate neighbours to be notified in writing on the date of commencement of construction work at least one month in advance;
- ✓ The project Proponent and contractors to ensure strict enforcement on user of ear protectors;
- ✓ Where applicable and possible exceptionally noisy machines to be fitted with noise reduction devices;
- ✓ Any employee who may complain about ear related pain and or complication while at work to access medical attention at the expense of the contractor or project proponent;
- ✓ Providing suitable hearing protection to all workers exposed to noise levels above 85dB(A); The noise impacts will be local; limited to the premises and very short – term.

5.4 IMPACTS OF HAZARDOUS WASTE & MITIGATION MEASURES

Impact Origin :

Sources of hazardous waste in a textile industry can be spent lube oil, oil filter and empty drum of hazardous chemicals etc.

Mitigation measures :

Hazardous wastes is identified and segregated from non-hazardous wastes and then handled and stored carefully. Sufficient on-site storage with impervious surface must be available to the volumes of waste collected on a daily basis. Vendors of DoE who has approval for handling hazardous waste should be selected for this operation and spent lubricant oil, oil filter, empty drum of paints and solvents will be handover to them for proper management.

5.5 RECOMMENDED MITIGATION / BENEFIT ENHANCEMENT MEASURES

Potential Impacts	Mitigation/Benefit Enhancement Measures
Impact on surface water quality	Disposal of all domestic waste to nearby sewer line.
Impact on ground water quality	Collection of all solid wastes properly. Disposal of all solid waste in proper place in proper way.
Impact on Air Quality	Proper stack height has to be installed.
Noise / vibration Hazard	Proper acoustic design should be made. Provide sufficient buffer strip.
Traffic congestion	Avoid carrying of materials in peak hour of road traffic.
Impact on health and safety	Workers to use appropriate PPE; Ventilation at workplace to be sufficient; Provide regular health inspection & health campaign.

5.6 ANTICIPATED POSITIVE IMPACTS OF THE PROJECT

Positive impacts identified due to implementation of the project includes:-

- Opportunity to Expand Textile Business;
- Creation of jobs;
- Beautification of locality;
- Support of local businesses;
- Infrastructure development;
- Revenue to Local Municipal Council; and
- Gains to the economy.

6.1 MANAGING FIRE SAFETY

A management commitment to fire safety is essential to assist with achieving suitable fire safety standards in premises and in the maintenance of a staff culture of fire safety. This chapter covers

management standards that should be achieved within all premises, in respect of:

- Fire safety policy;
- Emergency fire action plan;
- Fire safety information and training;
- Fire drills;
- Maintenance of fire safety measures; and
- Recording information and keeping records.

6.2 DIASTER MANAGEMENT PLAN

The disaster management plan should consist of preventive measures including, among others, the following.

- Formulation and strict implementation of safety codes and measures;
- Preventive maintenance;
- Aware the workers about electric shock
- Declaring the factory a “no smoking zone”
- Mock drills by the fire fighting cells/ groups
- Provision and inspection of fire fighting equipment and fire hydrant system in all area;
- Proper training of the employees about the importance of codes;

6.3 ENVIRONMENTAL HEALTH & SAFETY (EHS)

Health and safety aspects of the entire facility have already been developed and are suggested to develop maintain it continuously. The maintenance of Material Safety Data Sheets (MSDS) will be followed to ensure safety all section of the facility that chemicals are utilized. An Environment, Health and Safety register is essential for monitoring of performance of the entire facility community in relation to the environment. The management will use this as a self-auditing tool. This register should include:

- Fire extinguisher servicing records
- EHS meeting schedules and training records
- Electrical installations and maintenance records

- Waste disposal & inventory records (fuels, paints, cleaning agent)
- Emergency response procedure.

7.1 CONCLUSIONS

ESIA report has been prepared through identifying the potential impacts, assessing them and recommending possible mitigating and enhancing measure for negative and positive impacts, respectively. The findings of this Environmental and Social Impact Assessment (ESIA) suggests that the project involves potential but limited environmental impacts to which further careful attention should be given to minimize and offset the adverse effects. The possible negative impacts are not severe, and the adverse impacts if duly addressed could be minimized without much effort, though they would require attention and positive commitment from the Plant Management.

The location of Pioneer Knitwear (BD) Ltd is environmentally acceptable as has already been mentioned. However, adequate and effective pollution prevention, abatement and control measure, proper and careful operation and maintenance, regular and effective environmental monitoring with adequate staff and budgetary provision, and reporting to DOE should be ensured. It is expected that Pioneer Knitwear (BD) Ltd will follow all environmental compatible steps during by which it sets a positive example as an environment friendly industrial unit, very much within the environmentally acceptable limits all the time. It is also expected that DoE will do surveillance monitoring of the project performance.

7.2 RECOMMENDATIONS

Several environmental and social considerations need to be comprehensively addressed to improve the sustainability of the project. Some of these improvement proposals are summarized below:

1. Local people to be given priority in employment opportunities created by the project;
2. Pioneer Knitwear (BD) Ltd should undertake an expanded tree planting program within the factory and surrounding environment;
3. Workers to be given appropriate personal protective equipment; Pioneer Knitwear (BD) Ltd should employ latest pollution control technology.
4. All solid waste to be collected handled and disposed in accordance to applicable Waste Management Regulations.
5. Monitor Stack emission of the generator and take necessary step to keep the emission in standard level.

8.1 ACKNOWLEDGMENT

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BIOGRAPHY

Mohammad Anamul Haque Nayan has completed Masters in Environmental Science & Management from Jahangirnagar University, Bangladesh. On behalf of Jahangirnagar University, as a Speaker he has given Oral Presentation in 9th International Conference on Global Warming Climate Change and Pollution Control in Vancouver, Canada. His Topics was Current Scenarios of Greenhouse Gas Emission in Bangladesh. He has visited 12 Countries of Asia, Europe & Canada for Training & Conference. He is a ISO 9001, ISO 14001 & SA 8000 Certify Auditor. At present he working as a Lead Internal Auditor of OVS. OVS is a RMG Italian Brand. He has vast experience on Social and Environmental system auditing. He has over 07 years experience in Social Compliance, OHS, Environment & 12 years experience in Consumer Product inspection.

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