PLEASE Project
Plastic Free Rivers and Seas for South Asia

South Asia Co-operative Environment Programme (SACEP) Plastic free Rivers and Seas for South Asia (P171269)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) OF RECYCLING BUSINESS UNIT - RUPGANJ

GRANTEE: BANGLADESH PETROCHEMICAL COMPANY LIMITED - BANGLADESH

Implemented by: SACEP
Supported by: UNOPS
Supported by: WORLD BANK GROUP

Environmental and Social Management Plan (ESMP)-Rupganj RBU
Bangladesh Petrochemical Company Ltd (BPCL)

1. Subproject Information

Subproject Title:	Formalization of Plastic Recycling Value Chain by Forming a Recycling Business Unit in Rupganj
Estimated Cost:	USD1,322,000
Start/Completion Date:	01 May 2024 - 31 July 2024

2. Site/Location Description

The "Formalization of the Plastic Recycling Value Chain through the Establishment of Recycling Business Units in Bangladesh" project, implemented by Bangladesh Petrochemical Company Limited (BPCL), is a key initiative under the PLEASE Project. The project is supported by the South Asia Co-operative Environment Programme (SACEP) and the World Bank, with implementation assistance from UNOPS. Its primary objective is to create an inclusive and efficient plastic recycling system in Bangladesh. As part of this effort, a Recycling Business Unit (RBU) will be set up in Rupganj, playing a pivotal role in formalizing the plastic recycling value chain and promoting sustainable recycling practices.

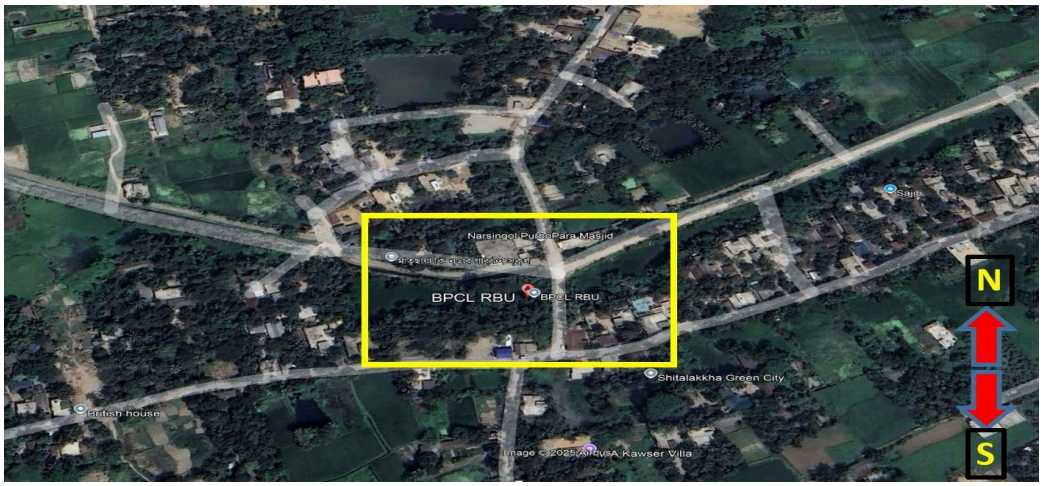
The proposed site for the Recycling Business Unit (RBU) is situated in the Narshingal area of Murapara Union, Rupganj Upazila, Narayanganj District, at geographic coordinates 23°46'21"N 90°32'07"E. The site is well-connected, with three 5-meter-wide roads on its west, north, and south sides, which converge onto a 7.5-meter-wide main road located 2.3 kilometers to the east, facilitating efficient truck transportation. Additionally, the main factory of Bangladesh Petrochemical Company Ltd. is located just 2.3 kilometers north of the site, accessible via a zonal road.

The proposed site spans approximately 1,393.5 square meters and is surrounded by a mix of residential and commercial areas. The Shitalokkha River, a significant waterway, flows 2.5 kilometers east of the site, with numerous ditches and canals scattered nearby. A water body located 5m behind the proposed site will be connected to a canal in front by installing a drain passing through the RBU. Agricultural land is also present in the vicinity, particularly to the northwest and southeast, where crops like paddy (*Oryza sativa*) are cultivated. Some local plant species, such as cinnamon (*Cinnamomum tamala*), have been observed growing along these fields. A mosque, serving as a religious place of worship, is located just 40 meters from the site, and several households are within a 100-meter radius of the proposed RBU.

Narayanganj experiences a tropical climate, with an annual average temperature of approximately 28.65°C (83.57°F). The area receives around 846 mm (33.3 inches) of precipitation annually, with May being the wettest month, and an average monthly rainfall of 70.51 mm (2.78 inches). Humidity

averages 67% annually, peaking at 81.74% during July and August. The region enjoys an average of 10.86 hours of sunshine per day, with May offering the most sunlight.

The site has been recently filled with sand, with no existing infrastructure or electricity connection, transforming it from its previous condition as a low-lying area. Before sand filling, the land was primarily covered with common local vegetation, including Jarmani Lota (*Mikania micrantha*) and Taro Leaves (*Colocasia esculenta*). These plants are not under any special conservation status, and no unique habitats or ecologically significant species are present on the site.



(Refer to Link-1 for a map of the land location and Link-2 for detailed information on Rupganj, including population data, livelihoods, and institutional details.)

3. Subproject Description and Activities

The main function of the Recycling Business Unit (RBU) is to collect PET from local informal waste pickers and scrap dealers, label removing and baling it on-site, and transport it to BPCL's main factory for recycling.
The project activities on-site are divided into two phases:

Construction Phase:

1. Clearing the area and compacting sand using water and a compactor, followed by earth cutting to a depth of 3 feet for the foundation and grade beam, covering an area of 7,889 square feet.
2. Installing a 400-foot depth, 4-inch bore with a 2.2 KW powered submersible pump to provide water for construction, operational activities, and drinking purposes which is available at the RBU site.
3. Constructing the main recycling shed (7,440 square feet), an office and childcare setup (400 square feet), and a two-chamber toilet (49 square feet) with a septic tank.
4. Installing the required machinery, including a conveyor bales system, a label remover, and two baling machines.

5. Setting up a 500KVA-400KW electrical system to power the machinery, along with plumbing for necessary pipes, fittings, and fixtures.

Operational Phase:

1. Waste Plastic Receiving and Sorting: PET and non-PET plastics, excluding pesticide and medical plastic waste, are received from informal waste pickers and scrap dealers. The materials are initially sorted into PET and non-PET categories, followed by color sorting. Non-PET plastics are further categorized into approximately 20 types, enhancing their value and being sold to local buyers.
2. Label Removal and Baling: The sorted plastics are fed into a label remover to separate non-recyclable wrappers. The plastics are then hydraulically pressed into bales weighing 80-100 kg to reduce their volume.
3. Packing and Transportation: The compressed bales are packed and loaded onto transport vehicles and sent to BPCL's main factory for final processing into high-quality, food-grade PET resin in compliance with ISO 9001 standards, USFDA and EFSA.
4. Management of Removed Wrappers: Non-recyclable wrappers are stored in sealed packets and sold to buyers capable of recycling single-use polyethylene.

The resource requirements for the Recycling Business Unit include water and electricity, which are essential for its daily operations. An estimated maximum of 0.5 m^3 of water is required each day for various activities such as sanitation, drinking, handwashing, and watering plants. Electricity consumption for processing PET plastics, including label removal, baling, and security lighting, is approximately 25 kWh per ton of PET processed. Waste generation is expected to be around 1-5% of the total input material, consisting primarily of non-recyclable wrappers, plastics, and dirt.

The plot selected for the project, currently owned by Md. Shahjahan Bhuiyan has been leased to Bangladesh Petrochemical Company Limited (BPCL) for a five-year term, from November 1, 2024, to December 31, 2028. The land lease agreement has been finalized, and all legal documentation is complete. During the construction phase, approximately 26 workers will be employed, with no workers' camp required as they will commute daily from nearby areas. For the operational phase, 13 full-time local workers will be engaged, including personnel for sorting, processing, and administrative tasks, thereby minimizing accommodation requirements.

The construction and operational activities are not expected to have any significant impact on the nearby river. During construction, water usage will be minimal. For label removal and baling operations at the RBU, no water will be required, as neither hot washing nor cold washing processes will be involved. During the operational phase, no toxic solid waste will be generated. Wrapper waste will be stored in designated sealed packs and directed to the main factory for further processing, while degradable waste will be managed through the municipal waste management system.

The project is funded through the PLEASE Project, supported by the World Bank, with the South Asia Co-operative Environment Programme (SACEP) acting as the regional implementing agency. BPCL leads the implementation of the Recycling Business Unit (RBU), with technical support from UNOPS to ensure compliance with environmental and social standards. CDIP will serve as the implementing partner for social interventions. The Municipality will issue the initial No Objection Certificate (NoC)

for construction, followed by NoCs from the Department of Fire Service and Civil Defence and the Department of Inspection for Factories and Establishments. The final environmental clearance will be provided by the Department of Environment (DoE). During the operational phase, various stakeholders, including informal waste pickers, scrap dealers, and factory workers, will actively contribute to the recycling value chain.

4. ESMP Matrix: Risk and Impacts, Mitigation, Monitoring

4.1 Construction Stage:

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
Soil erosion and disturbance due to earth excavation, compaction, and surface runoff from construction work	I) Implement silt fences or erosion control barriers around the site to prevent soil displacement. II) Stabilize disturbed areas promptly using compaction or temporary coverings. III) Create drainage channels to manage surface runoff effectively and prevent soil washing. IV)Revegetation of 50 fast-growing native trees around the site to enhance soil stability and reduce erosion	At the site throughout the construction period for 3 months.	Engineer in charge from BPCL and implementing partner- Centre for Development Innovation and Practices (CDIP)	Silt fence condition with sedimentation accumulation rate. Drainage Efficiency. The growth of the 50 planted native trees, along with their survival rate. Physical observation of drainage sedimentation and water flow.	Monthly site Visit/Photo evidence Regular Monitoring	Environmental Expert - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 80

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
Air pollution results from dust emissions caused by land clearing, earthworks, excavation, material handling, and vehicle movement on unpaved surfaces. Without adequate controls, these activities can significantly degrade air quality, potentially posing respiratory health risks to workers and nearby communities.	I) Dust in surrounding areas will be controlled by water spraying as needed. II) Appropriate safety gear (PPE) will be provided to protect workers involved in construction work. III) Regular maintenance of all machinery will be conducted to minimize emissions and ensure efficient operation. IV)Loose materials in stockpiles will be covered to prevent them from being carried away by wind.	Periodic on-site inspections will be conducted throughout the land clearing, earthworks (such as filling and compaction), and during fabrication and transportation. These inspections will occur every two weeks during the construction phase	Site Engineer in Charge and contractor	Dust level and water sprinkling logs PPE compliance records for workers across all activities. Machinery maintenance logs, emission reduction records, efficiency reports, and downtime logs Stockpile coverage records and frequency. Availability of a complaint box and actions taken in response to complaints.	Monthly site visits will be conducted, accompanied by photo documentation as evidence.	Environmental Expert - BPCL Technical Expert - Environment UNOPS PLEASE project - Bangladesh	USD 80
Noise and vibration pollution result from the operation of heavy machinery and construction activities. Prolonged exposure	I) Construction activities will be restricted to daytime hours to minimize disturbances to the surrounding community.	During intermittent daytime activities throughout the three-month construction	Site Engineer in Charge and contractor	Record of the timing of construction activities. Availability and functionality of noise-measuring devices.	Monthly site visits will be conducted, with photo documentation provided as	Environmental Expert - BPCL Technical Expert - Environment	USD 150

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
without mitigation can cause discomfort, stress, hearing issues for workers, and disturbance to nearby residents	II) Noise levels at the site boundary will be maintained below 60 dB(A) during the day, in accordance with the Bangladesh Noise Pollution (Control) Rules 2006. III) Low-noise equipment will be selected and used to reduce noise emissions. IV) Regular noise level monitoring will be conducted on-site to ensure compliance with noise control measures. V) Appropriate safety gear, especially noise-canceling headsets, will be provided to protect workers from hearing damage.	period. These activities include brick crushing, RCC mixing, excavation, material handling, and heavy machinery operations, particularly during the installation of structural elements such as roofs, windows, and ceilings.		ToR (Terms of Reference) for procuring low-noise equipment. Noise monitoring records. Availability of low-noise equipment on-site. Number of complaints submitted through the GRM that have been addressed on time	evidence	UNOPS PLEASE project - Bangladesh	

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
Soil and water contamination results from improper wastewater management during construction activities, leading to environmental degradation and creating favorable conditions for mosquito breeding, which can pose health risks to workers and nearby communities	I) Construction wastewater will be directed to a dedicated sedimentation pit to prevent soil and water contamination. II) The sedimentation pit and surrounding areas will be cleaned daily to eliminate potential mosquito breeding sites. III) Drainage channels will be maintained to ensure proper water flow and prevent stagnation. IV) Mosquito repellents and larvicides will be applied to stagnant water areas as needed. V) A proper slope will be maintained in the drain to	On-site, specifically around the sedimentation pit and water channels, throughout the entire construction period (3 months).	Site Engineer in Charge and contractor	Operational status of the sedimentation pit, ensuring it effectively captures construction wastewater Record of cleaning the sedimentation pit. Evidence of maintenance of drainage channels. Evidence of the application of repellents. Monthly drain cleaning records. Physical inspection to confirm that the drain is not sedimented and has free water flow	Daily process inspections Monthly site visit	Environmental Expert - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 500

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
	ensure free gravitational water flow. VI) Monthly cleaning of accumulated sludge from the drain will be conducted.						
The risk of physical injury and psychological stress stems from unsafe working conditions during construction, including electrical wiring and machinery setup. Without proper safety measures, these risks can result in accidents, injuries, and mental health challenges for workers, ultimately impacting their well-being and productivity.	I. Equip all workers with necessary personal protective equipment (PPE), including helmets, gloves, safety boots, goggles, and high-visibility vests to reduce the risk of physical injuries. II. Implement strict safety protocols for all electrical wiring activities. III. Ensure accessible first aid kits are available on-site. IV. Provide adequate,	On-site during construction (3 Months).	Site Engineer in charge and Contractor	PPE Wearing PPE during construction activities. Availability of First Aid box, Accident register. Daily checking of water accumulated places and cleaning	Daily inspection Monthly Site visit By country team and photo evidences Daily records indicating the discussed and site examination records Photos/ physical	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 250

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
	well-ventilated workspaces, clean eating areas, and separate sleeping areas (if necessary) to ensure workers' comfort and well-being.				checking		
The spread of communicable diseases and overall health deterioration among workers is caused by inadequate hygiene and sanitation facilities, leading to reduced morale and negative social and health outcomes.	I. Provide well-maintained sanitation facilities, including hand washing stations, to ensure cleanliness and hygiene. II. Ensure a continuous supply of clean drinking water for workers.	On-site throughout the three-month construction period.	Site Engineer in charge and Contractor	Availability of adequate sanitary facilities Access to safe drinking water	Daily monitoring, Observation during the site visit	Project Manager and MEL Manager-BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 75
Psychological, physical, and social risks stem from incidents of sexual exploitation and abuse (SEA) and sexual harassment (SH), which can lead to mental	) Appoint a PSEA Focal Point at the site. II) Provide awareness training on recognizing, preventing SEA/SH for a) Project workers, and b) affected communities	Training and awareness sessions will be conducted prior to the commencement of work.	Site Engineer in charge from BPCL and Construction Contractor. A female volunteer from CDIP will act as	Number of training sessions conducted for workers. Number of awareness sessions held for communities.	Monthly site visit	Project Manager and MEL Manager-BPCL Technical Expert -	USD 150

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
distress, physical harm, and workplace disharmony.	III) Provide training on the GRM, including for SEA/SH-related grievances to a) Project workers, and b) affected communities IV) Request all Project workers to sign a Code of Conduct (CoC) including instructions for SEA/SH prevention Provide specific SEA/SH response mechanism as part of the Project GRM, including referral to SEA/SH services	Implementation of Gender Focal Points and signing of the Code of Conduct (CoC) at the site during the construction period.	BPCL's Gender and PSEA focal point on site. Gender and PSEA focal Point of BPCL	Number of GRM training sessions provided to communities. Percentage of workers who have signed the Code of Conduct (CoC). Number of SEA/SH Focal Points appointed. Actions taken in response to complaints submitted through the complaint box.		environment UNOPS PLEASE project - Bangladesh	
Potential health issues may arise from the influx of 26 laborers, increasing the risk of spreading communicable diseases and placing additional pressure on local health resources.	I. Conduct awareness sessions on communicable diseases for all workers. II. Establish on-site first aid stations and ensure workers have access to medical assistance.	On-site throughout the three-month construction period.	Site Engineer in charge and Contractor	Records of meetings and awareness sessions conducted. Maintenance logs for first aid kits	Monthly site visit	Project Manager and MEL Manager- BPCL Technical Expert - environment UNOPS PLEASE	USD 100

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
						project - Bangladesh	
Lack of understanding of EHS risks and impacts and of mitigation measures leads to accidents and health impacts	I. Assess the capacity of the construction company on OHS II. Train workers on OHS through toolbox talks	On site during construction period	Site Engineer in Charge and Construction Contractor	Percentage of construction companies whose capacity has been assessed. Number of toolbox talks conducted	Monthly monitoring	MEL Manager-BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 75
Lack of a Grievance Redress Mechanism (GRM)	I) Create awareness of the Project GRM and its reporting channels, implemented by the PIU II) A complaint box and the contact number of both construction contractors and the BPCL site engineer will be visibly displayed on-site. Workers will have the option to raise concerns anonymously, either by	On site throughout the construction period SEA/SH referral service mapping will be conducted before the commencement of works Linkages to the Project GRM will	Project Manager of BPCL and Contractor	Number of awareness sessions held Number of complaint boxes installed Number of SEA/SH Focal Points appointed Number of SEA/SH cases reported that receive referral services	Monthly monitoring report	Project Manager and MEL Manager-BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 100

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
	phone or through the complaint box. III) Ensure that the contact details of the SEA/SH Focal Point are placed on notice boards in the project location IV) Grievances will be registered and investigated promptly, with resolutions communicated transparently. V) Ensure that complaints received through additional complaint boxes or the SEA/SH Focal Point in relation to SEA/SH are handled with strict confidentiality and in a survivor-centered manner. VI) Establish a map of local SEA/SH service providers and ensure that every	be established before the commencement of works		Map of local SEA/SH service providers available			

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
	reported case is referred to services, if the survivor wishes						
Lack of compliance with labor laws and labor management procedures	I) Construction laborers will be trained and made aware of the GRM. A complaint box and the contact numbers for both construction contractors and the BPCL site engineer will be visibly displayed on-site. II) Workers will have the option to raise concerns anonymously, either by phone or through the complaint box. III) A code of conduct will be developed and implemented in line with national labor laws and the ESF of the PLEASE Project. IV) Wages will be paid in accordance with the Labor	on site throughout the construction	Site Engineer in charge and Construction Contractor	Number of workers' grievances filed. Availability and implementation of the code of conduct. Payroll records. Site visits and review of received complaints	Monthly Monitoring	MEL Manager-BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 75

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
	Management Procedures (LMP).						
Risk of child labor	I) Comply with the minimum age requirements of the Project (in compliance with national laws and ESS2) and document the age of workers upon hiring II) Verify the age of workers with communities where required III) Conduct a track record search of the contractors during the bidding process (record of health and safety violations, fines, consult public documents related to workers' rights	At the site, throughout construction	Site Engineer in charge from BPCL and Construction Contractor	Number of workers' grievances filed Number of track record searches conducted to verify compliance	Monthly Monitoring	Project Manager and MEL Manager-BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 75

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
	violations, GBV/SEA/SH issues, etc.)						
Risk of forced labor	I) Establish a confidential and accessible Grievance Redress Mechanism (GRM) for workers to report issues. II) Raise awareness in the communities about the GRM and available reporting channels.	Throughout construction period	Site Engineer in charge and Contractor	Number of grievances filed in workers' GRM	Monthly Monitoring	Project Manager and MEL Manager-BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 150
Lack of stakeholder engagement	I) Establish a site-specific stakeholder map that includes vulnerable groups, project-affected parties, and other interested parties (based on the Project Stakeholder Engagement Plan - SEP) II) Define information dissemination channels for	Before commencement of works	Site Engineer in charge and Construction Contractor	Availability of stakeholder mapping Number of project information dissemination events held Number of consultations with identified stakeholders conducted	Monthly Monitoring	Project Manager and MEL Manager-BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 75

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location & Frequency	Responsibility	
	the identified stakeholders and provide sub-project-related information III) Define consultation channels of the mapped stakeholders and conduct consultations with all stakeholders including on environmental and social risks and mitigation measures			Number of consultations with identified members of vulnerable groups conducted			

4.2 Operational Phase

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
Noise pollution arises from machine operations during label removal and baling, leading to discomfort, stress, and hearing problems for workers, as well as disturbances to nearby communities.	I) Specify low-noise emission standards as a requirement in the procurement and bidding process for machinery, to limit noise generation at the source. II) Conduct regular monitoring of noise levels to ensure compliance with noise control measures. III) Maintain noise levels at the site boundary below 60 dB(A) during daytime hours, in accordance with the Bangladesh Noise Pollution (Control) Rules 2006. IV) Provide personal	On-site during facility operations and throughout the machinery procurement process, Ongoing measures applied during machine operations.	Hub Manager, BPCL	Number of noise-related complaints recorded in the register. Number of machinery specifications verified to ensure compliance with low-noise emission standards. Number of complaints addressed through the GRM from workers and community members. Percentage of workers using appropriate PPE (earplugs and noise-canceling earmuffs) on-site.	Examination of Documents/reports/complaints Noise measurement report	Environmental Expert - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 500

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	protective equipment (PPE), including earplugs and noise-canceling earmuffs, to workers exposed to elevated noise levels. V) Raise awareness of the Project GRM and its reporting channels.						
Health risks arise from indoor air pollution and odor during plastic processing activities, such as label removal, and baling, potentially causing respiratory issues and discomfort for workers.	I. Assess the adequacy of the existing natural ventilation system to ensure sufficient air circulation during processing activities. II. If natural ventilation is insufficient, install additional mechanical ventilation systems as needed to maintain air quality.	On-site, continuously during facility operation.	Hub Manager, BPCL	Number of regular air quality checks conducted in processing areas. Operational status of exhausted fans . Percentage of workers wearing appropriate PPE. Number of air quality-related complaints tracked and resolved via the GRM.	Examination of Documents/reports/complaints Health report in focus on respiratory issues Monthly on-site visits and observation	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 175

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	III. Provide workers with appropriate personal protective equipment (PPE), such as masks and respirators, to reduce exposure to airborne pollutants. IV) Provide workers Grievance Redress Mechanism						
Physical, mental, and hygiene-related risks arise from inadequate occupational health, safety, and hygiene measures during operations such as sorting, baling, loading, and unloading. These risks can lead to injuries, stress, and a decline in worker well-being.	I. Provide essential PPE and prepare safety guidelines, accompanied by daily safety briefings for all workers. II. Conduct regular medical check-ups for employees to monitor and maintain their health. III. Offer first aid training and ensure first aid kits are	At the Recycling Business Unit, with daily implementation and continuous availability throughout operational activities.	Hub Manager, Gender Focal point and CDIP	Number of workers wearing appropriate PPE during operations. Number of health cards issued and monitored for tracking workers' health status. Number of first aid kits available with proper inventory management.	Monthly site visit including physical inspection and record checking as well as consultation with workers	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 250

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	easily accessible on-site. IV. Conduct fire safety training, and install appropriate fire extinguishers, fire hydrants, and clear instruction charts. V. Deliver safety and safeguard protocol training to all employees. VI. Implement an accident reporting mechanism to ensure prompt response and management of incidents. VII. Maintain clean and sanitary facilities, including separate washing areas for male and female workers, along with continuous access to safe drinking			Number of workers trained on fire safety and safeguarding protocols. Number of signboards with emergency phone numbers and precautionary messages displayed at the workplace. Availability and up-to-date status of the accident register in the RBU. Number of separate sanitation facilities for male and female workers, including handwashing facilities. Number of first aid boxes available with proper inventory.			

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	water.						
Reduced workforce participation arises from the lack of adequate childcare support, causing increased absenteeism and stress among women workers with children, ultimately affecting productivity and well-being.	I. Establish a safe, hygienic childcare center within the business unit to provide dedicated support for workers with young children. II. Employ trained and certified childcare professionals to manage and supervise the facility. III. Equip the childcare center with essential resources, including safe drinking water and educational materials, to promote the well-being and development of the children.	The Recycling Business Unit (RBU), in a designated area separate from the processing unit, with daily operations and support for workers.	Hub Manager, Child care attendant, CDIP	The existence of a safe and hygienic childcare center # of employed and trained childcare professionals Availability of safe drinking water and educational materials in the center	Report checking	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 150

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
The influx of 13 laborers may lead to social challenges, including increased pressure on local resources, community tensions, and cultural conflicts.	I. Organize regular worker meetings and awareness sessions focused on communicable disease prevention and health practices. II. Provide education and training on preventing and responding to gender-based violence (GBV). III. Develop a gender action plan and appoint a safeguarding focal point to address and prevent sexual exploitation (SE) and gender-based violence. IV. Prioritize hiring from the local community to reduce social disruption and foster local engagement.	At the Recycling Business Unit (RBU), with continuous implementation throughout the operational period.	Hub Manager, Gender focal point, CDIP	Availability of meeting and training records. Availability of records on gender awareness sessions. Availability of selection criteria for recruitment.	Monthly visit and review the documents	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 250
Gender discrimination arises from unequal employment	I. Develop and enforce non-discriminatory guidelines for recruitment	At the Recycling Business Unit (RBU), with	Hub Manager, Gender focal point and CDIP	Number of safeguarding policies implemented and monitored.	Regular monitoring	MEL manager - BPCL	USD 150

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
opportunities and wage disparities, leading to reduced workplace equity, dissatisfaction, and lower morale among affected workers.	processes and operational practices, ensuring equal treatment across all worker levels. II. Implement policies for equal pay, ensuring that male and female employees receive the same wages for equivalent roles and responsibilities. III. Establish a confidential complaint box to enable workers to report gender-related concerns safely and anonymously.	ongoing application throughout all employment practices and operations.		Percentage of payrolls accurately recorded in the payroll register. Number of complaint boxes installed and operational		Technical Expert - environment UNOPS PLEASE project - Bangladesh	
Waste generation arises from non-recyclable plastics, such as labels and wrappers, which, if not properly managed, can result in environmental pollution and health risks to nearby communities.	i) Store non-recyclable waste in sealed packets to prevent environmental contamination. II)Ensure proper waste storage and disposal to minimize environmental impacts.	Conduct bi-weekly inspections of storage conditions at RBU	Hub Manager	Waste storage conditions Volume or weight of waste stored on-site. Number of disposal receipts collected from recyclers.	Monthly visits, physical observation, and report checking	Project Manager and ENvironmental Expert - BPCL Technical Expert - environment UNOPS	USD 100

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	III) Sell stored waste to authorized recyclers.					PLEASE project - Bangladesh	
Risks of Sexual exploitation and abuse (SEA) and sexual harassment (SH) among workers and between workers and community members at the facility	I) Provide a workers' grievance redress mechanism (Workers' GRM), incorporating SEA/SH Focal Points for both genders and an effective referral mechanism II) Provide an anonymous reporting system along with protection measures for individuals who report III) Provide referrals to SEA/SH service providers as required IV) Provide training on recognizing, preventing, and responding to SEA/SH	Throughout operation	Hub Manager, Gender focal point and project manager of CDIP	Availability of workers' GRM and SEA/SH Focal Points Availability of reporting system Availability of a list of GBV service providers Number of SEA/SH awareness sessions for a) workers, and b) surrounding communities Availability of CoC Percentage of workers that have signed the CoC	Monthly monitoring	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 150

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	for workers and communities Prepare a Code of Conduct for workers at the facility that includes reference to SEA/SH V) Ensure workers at the facility sign a Code of Conduct (CoC)						
Lack of compliance with labor laws	I.) Workers will be made aware of the GRM II.) A complaint box and the contact information for construction contractors and the BPCL site engineer will be visibly displayed on-site, enabling workers to raise concerns anonymously via phone or the complaint box.	On site throughout operation	Hub Manager, MEL manager of BPCL, and project manager of CDIP, Gender and PSEA focal Point of BPCL	Number of workers' grievances filed and addressed. Percentage of workers covered under an implemented code of conduct. Number of payroll records maintained and verified for compliance.	Monthly monitoring	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 75

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	III) Grievances will be promptly registered, investigated, and transparently communicated with resolutions. IV) Development and implementation of code of conduct in line with national labor laws V) Ensure wages are paid in accordance with national labor laws.			Number of site visits conducted and grievances reviewed.			
Risk of child labor at the facility	I) Comply with minimum age requirements of national laws and document the age of workers upon hiring II) Verify the age of workers in collaboration with community	On site throughout operation	Hub Manager, MEL manager and project manager of CDIP	Number of workers' grievances filed	Monthly monitoring	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS	USD 75

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	representatives, where necessary.					PLEASE project - Bangladesh	
Risk of forced labor	I) Provide workers' GRM and access to Project GRM II) Raise awareness in communities	On-Site throughout the operation	Hub Manager, MEL manager and project manager of CDIP	Number of grievances filed in workers' GRM	Monthly monitoring	Project Manager and MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project - Bangladesh	USD 150
Gender discrimination in job opportunity and wage	I) Preparation of Non discriminating guidelines for recruitment process and operations affecting all levels of workers II) Ensure equal wages for male and female workers	Throughout operations	Hub Manager, Gender Focal point and project manager of CDIP	Number of HR policies available and implemented that address non-discrimination and equality. Number of grievances filed, addressed, and	Monthly monitoring	MEL manager - BPCL Technical Expert - environment UNOPS PLEASE project -	USD 125

Anticipated E&S Risks & Impacts	Risk Mitigation & Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation & Monitoring cost
		Location/ Timing/ Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	for the same roles and responsibilities.			resolved through the GRM.		Bangladesh	

5. Capacity Development & Training

To ensure the successful implementation of the Rupganj Recycling Business Unit (RBU) by Bangladesh Petrochemical Company Ltd (BPCL), comprehensive capacity-building and training programs are necessary. These programs will focus on skill enhancement, health and safety, gender equality, and environmental sustainability.

Construction Phase:

1. Training on safeguard measures, first aid, and emergency preparedness, including regular fire drills and response protocols will be provided by the gender focal point and MEL manager of BPCL.
2. Orientation on safe handling and use of personal protective equipment (PPE) will be provided by the project manager of CDIP.
3. Sessions on recognizing, preventing, and responding to sexual exploitation, abuse (SEA), and sexual harassment (SH) will be provided by the gender focal point of BPCL.
4. Awareness programs focused on preventing gender-based violence (GBV), Grievance redress mechanism (GRM), Labor Management procedures (LMP), and implementing response measures will be provided by the gender focal point of BPCL.
5. On-the-job training of fire safety, construction safety, environmental compliances, and waste management systems by engineer in charge of BPCL
6. Orientation on the importance of sustainable waste management, pollution control, and maintenance of natural resources will be provided by technical experts from BPCL.
7. Capacity development training on occupational health and safety (OHS) by an engineer in charge of BPCL and the contractor

Operational Phase:

8. Training on machine operations and procedures, covering the handling of plastic materials, including receiving, sorting, and baling will be provided by technical experts from BPCL.
9. Guidance on water reuse mechanisms, quality control processes, housekeeping practices, and environmental protection standards will be provided by the Factory Manager of BPCL.
10. Training on safeguard measures, first aid, and emergency preparedness, including regular fire drills and response protocols will be provided by the gender focal point and MEL manager of BPCL.
11. Sessions on recognizing, preventing, and responding to sexual exploitation, abuse (SEA), and sexual harassment (SH) will be provided by the gender focal point of BPCL.
12. Awareness programs focused on preventing gender-based violence (GBV), Grievance redress mechanism (GRM), Labor Management procedures (LMP), and implementing response measures will be provided by the gender focal point of BPCL.
13. Training on record keeping, log book maintenance, and the management of complaint systems, including the maintenance of the complaint box will be provided by the MEL manager of BPCL and the project manager of CDIP.
14. Capacity development training on occupational health and safety (OHS) by the project manager of CDIP.

6. Implementation Schedule and Cost Estimates

Construction Phase		
Mitigation Measure	**Implementation timeline**	**Estimated Cost (USD)**
1. Mitigation Measures *(Construction Stage)*: Includes noise testing, PPE provision, first aid kit facilities, social and sanitation facilities, and tree planting to mitigate construction impacts.	May-July, 2024	USD 300
2. Machine Installation: Provision of PPE and noise measurement during the setup phase.	July, 2024	USD 500
3. Grievance Redress Mechanism, Stakeholder engagement, technical expert, all kind of monitoring activities and site visit expenses	May-July, 2024	USD 375
4. Construction wastewater management, drainage channel maintenance, Mosquito repellent.	May - July, 2024	USD 405
5. Community consultation, awareness session, GRM, LMP and Health Camp	Up to the end of July 2024	USD 355

Operational Phase		
Mitigation Measure	**Implementation timeline**	**Estimated Cost (USD)**
1. Facility Operation and Management: Controls for noise and vibration,Water reuse systems, Ventilation systems, waste management and disposal, fire extinguishers, first aid kits, emergency control measures, sign boards, social and gender-related initiatives, and PPE.	August, 2024	USD 1200
2. Maintenance and support for child care facilities.	September, 2024	USD 200
3. Regular M&E to monitor GRM and LMP	July 2024 - May 2025	USD 150

4. Community consultation, and awareness sessions addressing the misconception about Recycling Business unit	October 2024 - May, 2025	USD 300
5. Capacity Development and Training: Completion of training sessions and programs for employees covering all operational, health, safety, gender discrimination and environmental standards.	Up to end of May 2025	USD 300

7. Attachments

- Land Agreement Rupganj.pdf
- Trade licence.pdf
- NOC-Rupganj.pdf
- Initial Site Survey Report
- GRM Policy
- LMP Policy
- Vetted Architectural Drawing
- Vetted Structural Drawing
- Vetted BOQ
- Vetted Soil Test Report
- Stakeholder Consultation report on Rupganj RBU
- Bangladesh Environmental Conservation Rules 2023

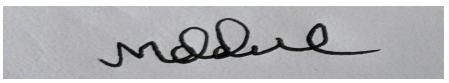
IV. Review & Approval

Shared By:

Engr. Aminul Islam Sohan

Position: Project Manager, Bangladesh Petrochemical Company Ltd (BPCL)

Date: 30/11/2024



Reviewed By: Md. Obidul Islam

Position: Project Manager

Date: 12/02/2024

Approved By: Kapila Rajapaksha

Position: Environment and Social Development Specialist- PIU-SACEP

Date 21/01/2024