

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 - CUMILLA

GRANTEE: BANGLADESH PETROCHEMICAL COMPANY
LIMITED (BPCL) - BANGLADESH



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

1. Subproject Information

Subproject Title:	Formalization of Plastic Recycling Value Chain by forming Recycling Business Units in Cumilla
Estimated Cost:	USD1,322,000
Start/Completion Date:	01 April 2025 - 31 May 2025

2. Site/Location Description

The "Formalization of the Plastic Recycling Value Chain" project, implemented by Bangladesh Petrochemical Company Limited (BPCL), is a key initiative under the PLEASE Project. It is funded by the PLEASE Project, which is implemented by the South Asia Cooperative Environment Programme, supported by the World Bank, and implemented with assistance from UNOPS. The project aims to develop an efficient and inclusive plastic recycling system in Bangladesh by addressing gaps in the recycling process and promoting sustainable practices. A significant component of the project is the establishment of a Recycling Business Unit (RBU) in Comilla, which will serve as a model for formalizing the plastic recycling value chain, creating economic opportunities, reducing environmental pollution, and enhancing the overall plastic recycling capacity in Bangladesh.

The proposed site for the Comilla Recycling Business Unit (RBU) is located adjacent to the Comilla-Sylhet Highway in the village of Shomeshpur, under Moynamoti Union, Burichang Upazila, Comilla District, within the Chittagong Division. The geographical coordinates of the site are Latitude: 23.503364, Longitude: 91.104203. The Comilla-Sylhet Highway adjacent which is 3m distance from the site, is a two-lane road with a width of approximately 16 feet, offering moderate accessibility for transportation and logistics. The total land area identified for the RBU comprises 42 decimals (18,293 sq ft), of which a formal agreement has been completed for the use of 25 decimals (10889 sq ft).

The surrounding environment of the site is characterized primarily by open land. Key features and land uses in the surrounding areas include in the West: At a distance of approximately 300 meters, there are a few residential households. The intervening land between the site and these residences is currently utilized for seasonal agricultural purposes such as rice crops, corn. The eastern side of the site adjoins a dairy farm, located approximately 10 meters from the boundary of the proposed Recycling Business Unit (RBU), along with additional open land identified for potential agricultural use, which is mainly rice crops. North and South: Both the northern and southern peripheries of the site are bordered by agricultural land and ongoing farming projects,



contributing to a primarily rural and agro-based landscape. Notably, within the boundary of the RBU site, there exists an open pit containing water within the site premises, covering an area of approximately 5,236 square feet. The pit appears to be abandoned and is not currently used for any specific purpose, which has a drainage outlet that connects directly to a natural khal (canal) located approximately 1 kilometer away. There is no electricity connection available on the site. However, three electricity poles are located adjacent to the land. The site also lacks a formal water supply and drainage system at this stage. Surface runoff during rainfall is managed through natural percolation, and no structured drainage or wastewater discharge system exists yet

Previously, the land was unused and remained vacant for an extended period. There are no recorded industrial or residential activities on the site before the current RBU initiative. Within a 1-kilometer radius of the Cumilla Recycling Business Unit (RBU), there are several key establishments, including a primary school, a high school, and a healthcare facility. Additionally, a few local plastic collectors and bhangari shops operate within the same distance, offering opportunities for integration into the RBU's supply chain.

Cumilla experiences a tropical climate characterized by distinct wet and dry seasons. The average annual temperature in Cumilla is approximately 28.65°. An average annual rainfall of about 2,005 mm (78.9 inches). The wettest month is June, with an average precipitation of 373 mm (14.7 inches), and the driest month is January, receiving approximately 7 mm (0.3 inches) of rainfall. Cumilla enjoys an average of 8.0 to 9.4 hours of sunshine per day, with the sunniest months being February and March, averaging 9.4 hours of sunshine daily.



(Refer to [Link-1](#) for a map of the land location and [Link-2](#) for detailed information on Cumilla, 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, process 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. After clearing approximately 95% bushes except for large trees in the area and compacting the sand with water and a compactor, we will make a foundation, grade beam, and footing for 3029 square feet of building area.
2. Installing a submersible pump to provide water for construction, operational activities, and drinking purposes.
3. Constructing the main recycling shed (1,500 square feet), sorting shed (750 square feet), office room (225 square feet), childcare facilities setup (180 square feet), a female changing room and a three-chamber toilet (56 square feet) with a septic tank.
4. Construction of a water treatment plant (WTP) with a treatment capacity of 1.5 to 2 cubic meters per hour will be installed. The WTP house will have a length of 18 feet, a width of 10 feet, and a depth of 4 feet
5. Installation of the required machinery, including one conveyor bale, one label remover, one PET crusher, one screw loader, one floating washer, one dewatering unit, two baling machines, and one blade sharpening machine.
6. Setting up an 80KW 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 sorted into PET and non-PET categories, followed by color sorting. Non-PET plastics are further categorized, enhancing their value and 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 shredded or hydraulically pressed into bales weighing 80-100 kg to reduce their volume.
3. Operation of Wastewater Treatment and Reuse- Wastewater from the process is directed to a sedimentation tank for particle settling. It then passes through a sand filtration tank to remove fine particles and is stored in a clean water tank. The clean water is then pumped to a reservoir tank, where it can be either drained or reused in the washing line.
4. Packing and Transportation: The PET flakes or 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 compliant with ISO 9001 standards, USFDA, and EFSA.



5. Management of Removed Wrappers: Non-recyclable wrappers are stored in sealed packets and sold to buyers capable of recycling single-use polyethylene.

Water and electricity are among the essential resources needed by the Recycling Business Unit, as they are necessary for day-to-day activities. A daily maximum of 0.5 m³ of water is estimated to be required for various activities, including drinking, handwashing, watering plants, and sanitation. Approximately 25 kWh of electricity is used for each ton of PET processed, including label removal, baling, and security lights. Maximum 5% of the total input material is expected to generate waste, mostly comprising dirt, plastics, and non-recyclable wrappers.

The plot selected for the project, currently owned by A.T.M Mizanur Rahman, has been leased to Bangladesh Petrochemical Company Limited (BPCL) for a five-year term, from April 1, 2025, to March 31, 2030. The land lease agreement has been finalized, and all legal documentation is being processed.

During the construction phase, approximately 18 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.

Neither the construction nor operational activities are expected to significantly impact the nearby river. Proper wastewater management measures will be implemented, including a sedimentation pit during construction and a wastewater treatment plant (WTP) during operation, ensuring that no untreated water is discharged into the river. Additionally, stringent monitoring of runoff and waste disposal practices will be in place to prevent contamination.

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. BPCL obtained the trade license and the No Objection Certificate (NoC) from the municipality. Followed by NoCs from the Department of Fire Service and Civil Defence and the Department of Inspection for Factories and Establishments. The Department of Environment (DoE) will provide the final environmental clearance. 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 and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
Soil erosion and disturbance due to earth excavation, compaction, and surface runoff from construction work	I) Plant native or fast-growing trees around the site to enhance soil stability and reduce erosion II) Create drainage channels to manage surface runoff effectively.	The 500-meter area surrounding the RBU will be monitored for the construction period.	Engineer in charge from BPCL	Condition of the brick barrier with the rate of sediment accumulation. 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 of Regular Monitoring	Environmental Expert- BPCL Project Manager and Technical Expert (Environment) UNOPS PLEASE Project Bangladesh	USD 175
Air pollution results from dust emissions caused by land clearing, earthworks,	I) Water spraying will be used as needed to manage dust in the surrounding areas. II) Cover building materials, including sand and soil, to	Periodic on-site inspections will be conducted throughout land clearing, earthworks such	Site Engineer in Charge and contractor	.Percentage of workers using appropriate PPE during all tasks (target: 100%).	Monthly site visits will be conducted, accompanied by photo documentation	Project Manager and Environmental Expert - BPCL	USD 100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
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.	<p>minimize wind erosion</p> <p>II) Appropriate safety gear (PPE), including dust masks, will be provided to protect workers involved in construction work.</p> <p>III) Regular maintenance of all machinery will be conducted to minimize emissions and ensure efficient operation.</p> <p>IV) Loose materials in stockpiles will be covered to prevent them from being carried away by wind.</p>	as filling and compaction, as well as during fabrication and transportation, with inspections occurring every two weeks during the construction phase.		<p>Availability of stockpile coverage records.</p> <p>Availability of the complaint box and actions taken in response to complaints.</p> <p>Availability of Dust Levels and Water Sprinkling Logs</p>	as evidence.	<p>Project Manager and Technical Expert - Environment UNOPS PLEASE project - Bangladesh</p>	

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
Noise and vibration pollution arise from heavy machinery operations and construction activities. Prolonged exposure without mitigation can cause discomfort, stress, or hearing issues for workers and disturb nearby residents.	<p>I) Noise levels at the site boundary will be maintained below 60dB(A) during the day, by the Bangladesh Noise Pollution (Control) Rules 2006.</p> <p>II) Use low-noise machinery and equipment that meet noise emission standards.</p> <p>III) Regular noise level monitoring will be conducted on-site to ensure compliance with noise control measures.</p> <p>V) Appropriate safety gear, especially a noise-cancellation headset, will be provided to protect workers to protect the harmful effects of hearing.</p>	During the construction period, activities will include brick crushing, RCC mixing, excavation, material handling, and heavy machinery operations, especially for installing structural elements like roofs, windows, and ceilings.	Site Engineer in Charge from BPCL and Construction contractor	<p>Monitoring and recording construction activity timings to ensure compliance with scheduled daytime operations</p> <p>Noise monitoring records are to ensure that noise levels comply with regulatory standards.</p> <p>ToR for the procurement of low-noise equipment to reduce noise pollution.</p> <p>Availability of low-noise equipment at the site</p>	Monthly site visits will be conducted, accompanied by photo documentation as evidence.	<p>Environmental Expert - BPCL</p> <p>Project Manager and Technical Expert - Environment UNOPS PLEASE project - Bangladesh</p>	USD 150

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
				Number of complaints submitted through GRM that have been addressed in time			
Soil and water contamination arises 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.	<p>I) Construction wastewater will be directed to the open pit of the land</p> <p>II) The existing open pit and surrounding areas will be cleaned daily to remove potential mosquito breeding sites.</p> <p>III) Mosquito repellents and larvicides will be applied to stagnant water areas as needed.</p> <p>IV) A proper slope will be maintained in the drain to ensure a free gravitational water flow in the drain</p>	On-site, specifically around the existing open pit, throughout the entire construction period.	Site Engineer in Charge from BPCL and the Construction contractor	<p>Operational status and cleaning records of the open pit.</p> <p>Evidence for the application of Mosquito repellent</p> <p>Monthly drain cleaning records</p>	<p>Daily process inspections</p> <p>Monthly site visit</p>	<p>Environmental Expert - BPCL</p> <p>Project Manager and Technical Expert - (environment) UNOPS PLEASE project - Bangladesh</p>	USD 120

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	V) Monthly cleaning of accumulated sludge from the drain						
Risk of physical injury and psychological stress arises from unsafe working conditions during construction, electrical wiring, and machinery setup. Without proper safety measures, these risks can lead to accidents, injuries, and mental health challenges for workers, affecting their	<p>I. Provide 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.</p> <p>II. Implement strict safety protocols for all electrical wiring activities.</p> <p>III. Ensure accessible first aid kits are available on-site.</p> <p>IV. Offer adequate, well-ventilated workspaces, clean eating areas, and separate sleeping areas (if</p>	On site during construction period.	Site Engineer in charge and Contractor	<p>Wearing PPE during construction activities.</p> <p>Availability of First Aid box, Accident register.</p> <p>Daily inspection of water-accumulated areas and their cleaning.</p>	<p>Daily records indicating the discussed and site examination records.</p> <p>Monthly Site visit by the country team and photo evidence.</p> <p>Photos/ physical checking</p>	<p>Project Manager and MEL manager - BPCL</p> <p>Project Manager and Technical Expert - Environment UNOPS PLEASE project - Bangladesh</p>	USD 120

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
well-being and productivity.	necessary) for workers' comfort and well-being.						
Spread of communicable disease and overall health deterioration among workers is caused by inadequate hygiene and sanitation facilities, leading to reduced morale and negative social and health outcomes.	<p>I. Provide well-maintained sanitation facilities, including hand-washing stations, to ensure cleanliness and hygiene.</p> <p>II. Ensure a continuous supply of clean drinking water for workers.</p> <p>III. Provide first aid kits and ensure accessibility for all workers.</p>	On-site throughout the construction period.	Site Engineer in charge and Contractor	<p>Availability of adequate sanitary facilities.</p> <p>Access to safe drinking water</p> <p>Record feedback from workers about health and hygiene conditions.</p> <p>Maintain logs, report illness, and health-related incidents</p>	Daily monitoring and observation during the site visit	Project Manager and MEL manager - BPCL Project Manager and Technical Expert - Environment UNOPS PLEASE project - Bangladesh	USD 250
Psychological, physical, and social risks arise from incidents of sexual exploitation and	<p>I) Appoint a PSEA Focal Point at the site.</p> <p>II) Provide awareness training on recognizing and preventing SEA/SH for a)</p>	Training and awareness will be conducted before the commencement of work	Site Engineer in charge of BPCL and Construction Contractor. A female volunteer	<p>Number of training sessions provided to workers.</p> <p>Number of awareness sessions provided to communities.</p>	Monthly site visit	Project Manager and MEL manager - BPCL Project Manager and Technical	USD 120

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
abuse (SEA) and sexual harassment (SH), leading to mental distress, physical harm, and workplace disharmony.	<p>Project workers, and b) affected communities</p> <p>III) Provide training on the GRM, including for SEA/SH-related grievances to a) Project workers, and b) affected communities</p> <p>IV) Request all Project workers to sign a Code of Conduct (CoC), including instructions on SEA/SH prevention Provide a specific SEA/SH response mechanism as part of the Project GRM, including referral to SEA/SH services</p>	Implementation of Gender Focal Points and signing of CoC at the site during the construction period	<p>from CDIP will act as BPCL's Gender and PSEA focal point on site.</p> <p>Gender and PSEA Focal Point of BPCL</p>	<p>Number of training sessions on GRM provided to communities.</p> <p>Percentage of workers who have signed the CoC</p> <p>Number of SEA/SH Focal Points appointed. Complaint box Actions taken in response to complaints</p>		<p>Expert Environment UNOPS PLEASE project Bangladesh</p> <p>-</p> <p>-</p>	
Potential health issues arise from the influx of 18 men and women laborers, which can increase the risk of spreading communicable	<p>I. Conduct awareness sessions on communicable diseases for all workers.</p> <p>II. Set up on-site first aid stations and ensure access to medical assistance for workers.</p>	On-site throughout the construction period.	Site Engineer in charge and Contractor	<p>Meetings and awareness records</p> <p>First Aid Kit Maintenance Logs</p>	Monthly site visit	<p>Project Manager and MEL manager - BPCL</p> <p>Project Manager and Technical Expert - Environment</p>	USD 140

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
diseases and place additional pressure on local health resources.						UNOPS PLEASE project - Bangladesh	
Lack of understanding of EHS risks and impacts, and 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	Project Manager and MEL manager - BPCL Project Manager and Technical Expert - Environment UNOPS PLEASE Project - Bangladesh	USD 150
Lack of a Grievance Redress Mechanism (GRM)	I. Create awareness of the Project GRM and its reporting channels, implemented by the SACEP PIU II. A complaint box and the contact number of both	Sub-Project Location/Through out the operational period SEA/SH referral service mapping to be conducted	Project Manager of BPCL and Contractor	Number of awareness sessions held Number of complaint boxes installed Number of SEA/SH Focal Points appointed	Monthly monitoring report	Project Manager and MEL manager - BPCL Project Manager and Technical Expert - Environment UNOPS PLEASE	USD 180

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	<p>construction contractors and the BPCL site engineer will be visibly displayed on-site. Workers will have the option to raise concerns anonymously, either by phone or through the complaint box.</p> <p>III. Ensure that the contact details of the SEA/SH Focal Point are placed on notice boards in the project location</p> <p>IV. Ensure that complaints received through the complaint boxes at the site are handled appropriately or transferred to the Project GRM</p> <p>V. Ensure that complaints received through additional complaint boxes or the SEA/SH Focal Point in relation</p>	<p>prior to commencement of works</p> <p>Linkages to Project GRM established prior to the works</p>		<p>Number of SEA/SH cases reported that receive referral services</p> <p>Map of local SEA/SH service providers available</p>		<p>project - Bangladesh</p>	

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	<p>to SEA/SH are handled with strict confidentiality and in a survivor-centered manner.</p> <p>VI. Establish a map of local SEA/SH service providers and ensure every case reported is provided with referrals, if the survivor wishes that.</p>						
Lack of compliance with labor laws and labor management procedures	<p>I) Construction laborers will be trained and made aware of the (GRM). A complaint box and the contact number of both construction contractors and the BPCL site engineer will be visibly displayed on-site.</p> <p>II) Workers will have the option to raise concerns anonymously, either by phone or through the complaint box</p>	On site throughout the construction	Site Engineer in charge and Construction Contractor	<p>Number of workers' grievances filed, Availability and implementation of the code of conduct</p> <p>Payrolls</p> <p>Site visit and reviewing received complaints</p>	Monthly Monitoring	<p>Project Manager and MEL manager - BPCL</p> <p>Project Manager and Technical Expert - Environment, Bangladesh country team,</p>	USD 170

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	<p>III) Development and implementation of the code of conduct in line with national labor laws and ESF of the PLEASE Project</p> <p>III) Wages will be paid in accordance with Labor Management Procedures (LMP)</p>						
Risk of child labor	<p>I. Comply with minimum age requirements of the Project (in compliance with national laws and ESS2) and document the age of workers upon hiring</p> <p>II. Verify the age of workers with communities where required</p> <p>III. Conduct a track record search of the contractors at the bidding process (record of health and safety violations, fines, consult</p>	At the site, throughout construction	Site Engineer in charge and Contractor	<p>Number of workers' grievances filed</p> <p>Number of track record searches conducted</p>	Monthly Monitoring	<p>Project Manager and MEL manager - BPCL</p> <p>Technical Expert - Environment UNOPS PLEASE project - Bangladesh</p>	USD 150

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing /Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	public documents related to workers' rights 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 communities	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 the identified stakeholders and provide	Prior to the commencement of works	Site Engineer in charge and Construction Contractor	Availability of stakeholder mapping Number of project information dissemination events Number of consultations with identified stakeholders	Monthly Monitoring	MEL manager - BPCL Technical Expert - Environment UNOPS PLEASE project - Bangladesh	USD 175

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

4.2 Operational Phase

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
Potential water and soil pollution due to wastewater generated from plastic cleaning and washing processes, with risks of contaminating the adjacent canal. Discharge of untreated wastewater, including microplastics and labels, may adversely impact the canal's ecosystem, potentially harming aquatic life and degrading water quality.	<p>I. Install and operate an on-site wastewater treatment plant (WTP) to ensure that all wastewater from the plastic washing line is treated to meet the discharge standards outlined in the Environmental Conservation Rules (ECR) 2023, thus preventing pollution of the canal.</p> <p>II. Routinely monitor and test treated wastewater before discharge to confirm it complies with environmental standards, with additional precautions taken during rainy seasons to avoid accidental runoff into the canal.</p> <p>III. Capture microplastics during the treatment process and securely store them in sealed containers to</p>	These measures will be implemented on-site with continuous monitoring and testing of treated wastewater throughout the operation phase to ensure compliance with environmental standards (ECR-2023) and protection of the canal ecosystem.	Hub Manager, BPCL	<p>WTP operational records</p> <p>Water quality testing report for the following parameters: pH, DO (Dissolved Oxygen), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), and TDS (Total Dissolved Solids).</p> <p>Physical observation record of no blockage and free flow of water</p>	Analytical reports of treated water are once in 3 months	Environmental Expert- BPCL Project Manager- UNOPS PLEASE project - Bangladesh	USD 1200

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	<p>prevent any release into the environment.</p> <p>IV. Collect labels and other non-recyclable materials separately and store them in sealed containers for safe, controlled disposal, minimizing any chance of leakage or exposure to the canal.</p> <p>V. Regularly inspect and maintain drainage systems and containment structures to prevent accidental spillage or overflow into</p>						

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
Depletion of groundwater resources due to water use in the operation of the washing line, wastewater treatment plant (WTP), and sanitation facilities.	I. Implement a water reuse system that recycles treated wastewater from the WTP back into the washing line to significantly reduce the need for groundwater extraction.	On-site, with continuous reuse of treated wastewater in the washing line throughout the operation phase.	Hub Manager, BPCL	Amount of water reused recorded	Report of total water consumption vs reused water	Environmental Expert- BPCL Project Manager- UNOPS PLEASE project - Bangladesh	USD 200
Noise pollution results from machine operations during label removal and baling, causing discomfort, stress and hearing problems for workers and disturbance 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. Regular monitoring of Noise Level to ensure compliance with noise control measures. III. Maintain noise levels at the site boundary below 60dB(A) during daytime hours, by the Bangladesh Noise Pollution (Control) Rules 2006.	On-site during facility operations and throughout the machinery procurement process, Ongoing measures are applied during machine operations.	Hub Manager, BPCL	Reports, Complaint register Satisfactory noise level at RBU and its periphery area Use of proper PPE by workers Apply Grievance Redress Mechanism (GRM) to Record and	Examination of Documents/reports/complaints Noise measurement report	Environmental Expert- BPCL Project Manager- UNOPS PLEASE Project - Bangladesh	USD 150

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	<p>IV. Provide personal protective equipment (PPE), including earplugs and noise-canceling earmuffs, for workers exposed to elevated noise levels.</p> <p>V. Create awareness of Project GRM and its reporting channels</p>			address noise-related complaints			
<p>Health risks arise from indoor air pollution and odor during plastic processing activities, such as label removing and baling, potentially causing respiratory issues and discomfort for workers.</p>	<p>I. Assess the adequacy of the existing natural ventilation system to ensure sufficient air circulation during processing activities.</p> <p>II. If natural ventilation is insufficient, install additional mechanical ventilation systems as needed to maintain air quality.</p> <p>III. Provide workers with appropriate personal protective equipment (PPE), such as masks and respirators, to reduce exposure to airborne pollutants.</p>	<p>On-site, continuously during facility operation.</p>	<p>Hub Manager, BPCL</p>	<p>Exhausted fans are operational</p> <p>Workers are wearing PPE</p> <p>Tracking and resolving air quality complaints via GRM</p>	<p>Examination of Documents/reports/complaints</p> <p>Health report in focus on respiratory issues</p> <p>Monthly on-site visits and observation</p>	<p>Project Manager and MEL Manager - BPCL</p> <p>Project Manager - UNOPS PLEASE</p> <p>Project - Bangladesh</p>	<p>USD 175</p>

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
Physical, mental, and hygienic risks arise from inadequate occupational health, safety, and hygiene measures during operations, including sorting, baling, loading, and unloading, potentially leading to injuries, stress, and poor worker well-being.	<p>I. Provide essential PPE and prepare safety guidelines, accompanied by daily safety briefings for all workers.</p> <p>II. Conduct regular medical check-ups for employees to monitor and maintain their health.</p> <p>III. Offer first aid training and ensure first aid kits are easily accessible on-site.</p> <p>IV. Conduct fire safety training and install appropriate fire extinguishers, fire hydrants, and clear instruction charts.</p> <p>V. Deliver safety and safeguard protocol training to all employees.</p> <p>VI. Implement an accident reporting mechanism to ensure prompt response and management of incidents.</p>	At the Recycling Business Unit, with daily implementation and continuous availability throughout operational activities.	Hub Manager, Gender Focal Point from BPCL, and Project Manager of CDIP	<p>Number of Workers of workers who wear appropriate PPE</p> <p>Monitoring health status through the Health Card</p> <p>First aid kits are available with proper inventory</p> <p>A number of workers received training on fire safety, safeguard protocol</p> <p>Signboards of emergency phone numbers and precautionary messages are hung in the workplace.</p>	<p>Monthly site visits, including physical inspection and record checking, as well as consultation with workers</p>	<p>Project Manager and MEL Manager - BPCL</p> <p>Project Manager- UNOPS PLEASE - Bangladesh</p>	USD 200

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	VII. Maintain clean and sanitary facilities, including separate washing areas for male and female workers, along with continuous access to safe drinking water.			<p>The accident register is available in RBU.</p> <p>Separate sanitation facility for male and female workers, including hand hand-washing facility</p> <p>Availability of the first aid box and its inventory</p>			
Reduced workforce participation arises from the lack of adequate childcare support, causing increased absenteeism and stress among women workers with children, ultimately affecting	<p>I. Establish a safe, hygienic childcare center within the business unit to provide dedicated support for workers with young children.</p> <p>II. Employ trained and certified childcare professionals to manage and supervise the facility.</p>	At the Recycling Business Unit (RBU), in a designated area separate from the processing unit, with daily operation and support for workers.	Hub Manager, Child care attendant, CDIP	Child care log book and physical observation	Once in three months	MEL Manager - BPCL Project Manager- UNOPS PLEASE - Bangladesh	USD 150

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
productivity and well-being.	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 possibility of social challenges arises from an influx of 13 labor, potentially leading to increased pressure on local resources, community tensions, and cultural conflicts.	<p>I. Organize regular worker meetings and awareness sessions focused on communicable disease prevention and health practices.</p> <p>II. Provide education and training on preventing and responding to gender-based violence (GBV).</p> <p>III. Develop a gender action plan and appoint a safeguarding focal point to address and prevent sexual exploitation (SE) and gender-based violence.</p> <p>IV. Prioritize hiring from the local community to reduce social</p>	At the Recycling Business Unit (RBU), with ongoing implementation throughout the operational period.	Hub Manager, Gender Focal Point, CDIP	Availability of meeting and training records, Records on gender awareness,	Monthly visit and review the documents	MEL Manager - BPCL Project Manager- UNOPS PLEASE - Bangladesh	USD 200

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	disruption and foster local engagement.						
Gender discrimination arises from unequal employment opportunities and wage disparities, leading to reduced workplace equity, dissatisfaction, and lower morale among affected workers.	<p>I. Develop and enforce non-discriminatory guidelines for recruitment processes and operational practices, ensuring equal treatment across all worker levels.</p> <p>II. Implement policies for equal pay, ensuring that male and female employees receive the same wages for equivalent roles and responsibilities.</p> <p>III. Establish a confidential complaint box to enable workers to report gender-related concerns safely and anonymously.</p>	At the Recycling Business Unit (RBU), with ongoing application is throughout all employment practices and operations.	Hub Manager, Gender Focal Point and CDIP	<p>Availability of the safeguarding policy and its implementation</p> <p>The number of workers received non-discriminatory orientation</p> <p>Wages disbursement report of RBU workers</p> <p>Availability of a complaint box in the RBU</p>	Regular monitoring	MEL Manager - BPCL Project Manager-UNOPS PLEASE Project - Bangladesh	USD 200
Waste generation arises from non-recyclable plastics, such as labels	I. Safely store non-recyclable waste in sealed packets to prevent environmental contamination.	Conduct bi-weekly inspections of storage conditions at RBU	Hub Manager	Amount of waste stored	Monthly visit, physical observation,	Project Manager and MEL Manager - BPCL	USD 100

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
and wrappers, which, if not properly managed, can result in environmental pollution and health risks to nearby communities.	<p>II. Implement proper waste storage and disposal practices to reduce environmental impacts.</p> <p>III. Transfer stored waste to authorized recyclers for responsible processing.</p>			Disposal receipts from recyclers	and report checking	Project Manager-UNOPS PLEASE - Bangladesh	
Risks of Sexual exploitation and abuse (SEA) and sexual harassment (SH) among workers and between workers and community members at the facility	<p>I. Provide a workers' grievance redress mechanism (Workers' GRM), incorporating SEA/SH Focal Points for both genders and an effective referral mechanism</p> <p>II. Provide an anonymous reporting system along with protection measures for individuals who report</p> <p>III. Provide referrals to SEA/SH service providers as required</p>	Throughout operation	Hub Manager, Gender focal point, and project manager of CDIP	<p>Availability of workers' GRM and SEA/SH Focal Points.</p> <p>Availability of the reporting system.</p> <p>Availability of a list of GBV service providers</p> <p>Number of SEA/SH awareness sessions for a) workers, and b) surrounding communities.</p>	Monthly monitoring	<p>Project Manager and MEL Manager - BPCL</p> <p>Project Manager-UNOPS PLEASE - Bangladesh</p>	USD 150

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	<p>IV. Provide training on recognizing, preventing, and responding to SEA/SH for workers and communities</p> <p>V. Prepare a Code of Conduct for workers at the facility that includes reference to SEA/SH</p> <p>VI. Ensure workers at the facility sign a Code of Conduct (CoC)</p>			<p>Availability of CoC.</p> <p>Percentage of workers who have signed the CoC</p>			
Lack of compliance with labor laws	<p>I. Workers will be made aware of the GRM</p> <p>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 phone or through the complaint box</p>	On site	Hub Manager, MEL Manager of BPCL, and Project Manager of CDIP, Gender and PSEA Focal Point of BPCL	<p>The number of workers' grievances filed.</p> <p>Availability and implementation of the code of conduct.</p> <p>Payroll records management</p>	Monthly monitoring	<p>Project Manager and MEL Manager - BPCL</p> <p>Project Manager-UNOPS PLEASE Project - Bangladesh</p>	USD 75

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	<p>III. Grievances will be registered and investigated promptly, with resolutions to be communicated transparently</p> <p>IV. Development and implementation of a code of conduct in line with national labor laws</p> <p>V. Pay wages following national laws</p>			Site visit and reviewing received complaints.			
Risk of child labor at the facility	<p>I. Comply with the minimum age requirements of national laws and document the age of workers upon hiring</p> <p>II. Verifying the age of workers with communities where required.</p>	At the site, Monthly	Hub Manager, MEL Manager of BPCL and Project Manager of CDIP	Number of workers' grievances filed	Monthly monitoring	Project Manager and MEL Manager - BPCL Project Manager-UNOPS PLEASE Project - Bangladesh	USD 75
Risk of forced labor	I. Provide workers' GRM and access to Project GRM	On Site throughout operation	Hub Manager, MEL manager and project manager of	Number of grievances filed in workers' GRM	Monthly monitoring	Project Manager and MEL Manager - BPCL	USD 75

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring			Mitigation and Monitoring cost
		Location/Timing/Frequency	Responsibility	Aspects / Parameters to be monitored	Methodology, including Location and Frequency	Responsibility	
	II. Raise awareness in communities		CDIP			Project Manager-UNOPS PLEASE Project - Bangladesh	
Gender discrimination in job opportunities and wages	<p>I. Develop inclusive and non-discriminatory guidelines for recruitment and operations impacting workers at all levels.</p> <p>II. Ensuring equal wages for male and female workers/employees.</p> <p>III. Installation of a complaint/issue submission box.</p>	Throughout the operations	Hub Manager, Gender Focal point and project manager of CDIP	Availability of HR Policy Grievance Redress Mechanism	Monthly monitoring	Project Manager and MEL Manager - BPCL Project Manager-UNOPS PLEASE Project - Bangladesh	USD 75

5. Capacity Development & Training

To ensure the successful implementation of the Cumilla 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) and implementing response measures will be provided by the gender focal point of BPCL.
5. On-the-job training in fire safety, construction safety, environmental compliance, and waste management system by an engineer in charge from 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:

1. 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.
2. Guidance on water reuse mechanisms, quality control processes, housekeeping practices, and environmental protection standards will be provided by the Factory Manager of BPCL.
3. 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.
4. 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.
5. Awareness programs focused on preventing gender-based violence (GBV) and implementing response measures will be provided by the gender focal point of BPCL.
6. Training on record keeping, logbook maintenance, and the management of complaint systems, including the maintenance of the complaint box, will be provided by MEL manager of BPCL and the project manager of CDIP.
7. 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 (<i>Construction Stage</i>): Includes noise testing, PPE provision, first aid kit facilities, social and sanitation facilities, and tree planting to mitigate construction impacts.	May, 2025	USD 575
2. Machine Installation: Provision of PPE and noise measurement during the setup phase.	May, 2025	USD 320
3. Grievance Redress Mechanism, Stakeholder engagement, technical expert, all kinds of monitoring activities, and site visit expenses	May, 2025	USD 550
4. Construction wastewater management, sedimentation tank and drainage channel maintenance, and Mosquito repellent.	May, 2025	USD 320
5. Community consultation, awareness session, and Health Camp	May, 2025	USD 385
TOTAL		2150
Operational Phase		
Mitigation Measure	Implementation timeline	Estimated Cost (USD)
1. Wastewater Treatment and Analysis: Ongoing treatment and quality analysis of wastewater generated from operations	May, 2025	USD 1200

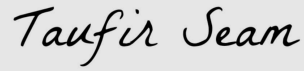
2. Facility Operation and Management: Controls for noise and vibration, Water reuse systems, Ventilation systems, waste management and disposal, fire extinguishers, first aid kits, emergency control measures, sign boards, social and gender-related initiatives, and PPE.	May, 2025	USD 550
3. Maintenance and support for childcare facilities.	May, 2025	USD 200
4. Regular M&E to monitor GRM	May, 2025	USD 575
5. Community consultation, and awareness sessions addressing the misconception about Recycling Business unit	May, 2025	USD 200
6. 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
TOTAL		3025
Overall Cost (Construction+Operation)		5175

7. Attachments

1. [NO objection Certificate from the Local Authority](#)
2. [Trade Licence](#)
3. [Land Agreement](#)
4. [Initial Site Survey](#)
5. [BOQ](#)
6. [Vetted Architectural Drawing](#)
7. [Vetted Structural Drawing](#)
8. [Soil Test Report](#)
9. [Structural Integrity and Safety Assessment Report](#)
10. [Stakeholder Consultation Report](#)
11. [Grievance Redress Mechanism for Cumilla RBU](#)
12. [Labor Management Plan](#)
13. [WTP](#)
14. [Cumilla Site Photos](#)

IV. Review & Approval

Prepared By:

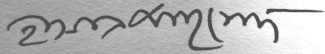


Name: Taufir Ahmed Seam

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

Date: 21/07/2025

Reviewed By:



Name: Hasan Ahmed

Position: Technical Expert-Environment

Date: 24/7/2025

Approved By:



Name: S W Lakshman

Position: Senior Financial Management
Specialist/Officiating Project Director

Date: 23/09/2025