

EBRD COVID-19 Resilience Framework - Environmental and Social Assessment Training Programme

PR3 – Resource Efficiency and Pollution Prevention and Control – ESDD Guidance

Introduction

PR3 addresses the potential environmental impacts arising from the use of resources, and the generation of emissions and waste. PR3 applies the mitigation hierarchy: the principle that environmental damage should be avoided or minimised at its source. PR3 also applies the “polluter pays” principle where the organisation producing the pollution should bear the costs of managing it (from cradle to grave) to prevent damage to human health and the environment.

PR3 requirements are often higher compared with national legislation. For example, PR3 has a strong focus on reusing resources that are typically considered as waste materials, and the ESDD process should challenge the Client’s approach to managing their waste streams seeking opportunities for re-use and recycling as part of a circular economy.

PR3 requires Projects to apply mitigation measures, technologies and practices to ensure resources are used efficiently, pollution is prevented and controlled, and greenhouse gas (GHG) emissions are minimised. During the ESDD, the consultant should determine if the Project is using and applying Best Available Techniques (BAT) and Good International Practice (GIP) reflected in the European Union and elsewhere, to optimise resource use, and prevent and control pollution.

It is important to note that the overall aim of any ESDD assignment, regardless of the specific characteristics of an individual Project, is to:

- identify and assess potentially significant, existing and future, adverse environmental and social impacts associated with the Client’s current operations and the Project;
- assess compliance with applicable laws and EBRD’s Environmental and Social Policy (2019);
- determine the measures needed to prevent or minimise and mitigate the adverse impacts; and
- identify potential environmental and social opportunities, including those that would improve the environmental and social sustainability of the Project and the current operations.

The ESDD process should be commensurate with, and proportional to, the scale and

magnitude of the Project, and the associated environmental and social risks and impacts. The ESDD will cover, in an integrated way, all relevant direct and indirect environmental and social risks and impacts of the Client's operations, the Project and the relevant stages of the Project cycle (e.g. pre-construction, construction, operation, and decommissioning or closure and reinstatement).

The guidance on PR3 is presented across each of the three ESDD tasks:

Task 1 – Review of existing documentation

To assist in preparing for the visit the following documents should be requested from the Client:

- any calculations or estimates of emissions and discharges prepared as part of national permitting requirements;
- details of the proposed or existing process technology and equipment, their design, and their predicted and actual environmental performance parameters;
- details of the fuel and resources used for the Project (e.g. gas, oil; diesel; water, etc.).
- results of any relevant baselines surveys (soil; groundwater; surface water; ambient air quality, etc.) during the original site selection process, to avoid and minimise environmental and social risks and impacts;
- details of the site layout, the main processes at the Project, and an inventory of chemicals used; and
- details of environmental licenses, permits or consents for specific types of emissions, such as wastewater, etc.
- detailed waste inventory identifying source, characteristics, volumes and the management, storage and ultimate disposition of each waste stream; and
- results of instrumental monitoring and measurements.

The Client's documentation should be compared against applicable national legislation and EBRD's requirements, the key elements of which are summarised using the table overleaf.

PR3 Requirement	Issues to consider
In the design of the Project, the Client should adopted technically and financially feasible and cost effective measures for minimising its consumption and improving efficiency in its use of energy, water and other resources and material inputs. The Project should also proactively consider recovering, reusing or repurposing waste materials.	What is the age and physical status of the facilities and what are the key risks to consider? <i>NOTE: this could be the inefficient use of resources, polluting air emissions, industrial effluent treatment systems, presence of Persistent Organic Pollutants, etc.</i> If the Project involves the modernisation and upgrade of an existing facility, will the proposed activities improve the environmental performance of the Project? Is it possible to achieve the environmental standards required by installing additional pollution control technologies? <i>NOTE: this could include installing wet scrubbers, electrostatic precipitators, oil traps, additional treatment units, etc.</i> What are the main resources used by the Project (e.g. water, natural gas, wood, minerals, etc.)? Is their use measured and monitored? Has the Client evaluated ways to reduce or optimise the use of resources (including wastes) or recover energy or other products from the use of these resources? <i>NOTE: this may include heat recovery, wastewater recovery and reuse for irrigation or other purposes.</i> Has the Client compared their performance to other Clients operating in the same industry sector, in relation to their use of natural resources?
More specifically the Client will integrate resource efficiency measures and the principles of cleaner production into product design and production processes with the objective of conserving raw materials, energy and water and avoiding and reducing waste.	Has the Client examined how they could increase the efficiency of their resources used?

PR3 Requirement	Issues to consider
Water. Where a Project specific water supply needs to be developed, the Client will seek, where feasible, to utilise water for technical purposes that is not fit for human consumption.	Where is the Project's water supply coming from? Are there buffer zones around water wells/water sources to prevent an ingress of contaminants from the surface? Is the water intake and use measured and monitored? Are there any water losses during the abstraction, transportation or use of water by the Project? Has the Client assessed the environmental impact and sustainability of their water abstraction and use? <i>NOTE: this could include assessing the Project's impact to other water users, calculating water balances, checking recharge sources, etc.</i> Has the Client considered all feasible alternatives to reuse water where possible? Has the Client considered ways to avoid the use of treated potable water for purposes that do not require water of this quality? Has the Client assessed if the Project's water supply is at risk in the future from the demands of others, or due to regional water conflicts or climate change? What are the permitted limits on any abstraction, and is the Project operating within the limits?

PR3 Requirement	Issues to consider
For Projects with a high water demand (exceeding 5,000 m³/day), the following will apply: ▪ a detailed water balance will be developed during the assessment process and maintained and reported annually to EBRD; ▪ specific water use (measured by volume of water used per unit production) will be assessed; ▪ operations will be benchmarked to available industry standards and GIP of water use efficiency; and • Opportunities for continuous improvement in terms of water use efficiency and recovery should be identified.	Does the Project use more than 5,000 m³ of water a day? If yes, then check that the requirements from PR3 are being complied with. Could the Project's future water use exceed the threshold of 5,000 m³ of water a day? If yes, then does the Client keep a detailed water use inventory? Does the Client have clearly documented records/measurements of water use per specific unit of production and/or individual facility, installation and site levels? Is the Client aware about existing industry standards, modern technologies, etc. that allow reducing the use of resources (e.g. EU Reference Documents on Best Available Techniques, etc.)? Does the Project have a detailed understanding of its water use? Are there enough water meters installed to check the assumptions made in the water balance? What water reuse or recycling activities are part of the Project's design?
Waste: The Client will avoid or minimise the generation of waste materials and reduce their harmfulness as far as practicable. Where waste generation cannot be avoided but has been minimised, the Client will reuse, recycle or recover waste, or use it as a source of energy in a manner that is safe for human health and the environment. Where waste cannot be recycled, reused or recovered, the Client will need to appropriately treat and/or dispose of it in an environmentally sound and safe manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material, and where relevant, in accordance with EU substantive environmental standards.	For existing activities, what are the Clients' initiatives to avoid, reduce or mitigate impacts from their waste generation? <i>NOTE: this could include switching to less polluting fuels, energy saving measures, the re-use or recovery of resources, use of natural fertilisers, reduction in use of harmful pesticides, etc.</i> Has the Client used the mitigation hierarchy (avoid, reduce, reuse, recycle) in the design of the Project, and also in the selection of processes and chemicals that are to be used? Does the Client use Key Performance Indicators (KPIs) or any methods to record and analyse volumes of generated waste and track their ability to minimise, reduce and recycle waste? Is there a dedicated team responsible for the collection and handling of waste? What training on waste segregation and handling is given to workers?

PR3 Requirement	Issues to consider
When waste disposal is transferred offsite and/or managed by third parties, the Client will obtain chain of custody documentation to the final destination and will use contractors that are licensed by the relevant regulatory agencies. The Client will maintain an appropriate duty of care with respect to waste management.	How many waste contractors does the Client use? Does the Client check that contractors used for waste handling, transporting, treatment and disposal have the necessary permits and licenses? Does the Client implement a waste manifest system and record the volumes of waste sent for disposal, along with its type, and chemical and physical composition? <i>NOTE: the Client should be able to demonstrate the way in which wastes are being recorded from their point of origin, through to their reuse/recycling, or treatment/disposal using paper chain of custody documentation, or a similar electronic system.</i> How does the Client ensure there is no fly-tipping or unauthorised disposal of waste? How does the Client check the accuracy of the waste recording system being used? How accurate are the quantities of waste materials being recorded or estimated? <i>NOTE: the Client should have a system of accurately recording the waste quantities generated, using a weighbridge or other equipment.</i> Has the Client completed an audit of the third-party waste management facilities? Do third-party waste facilities have sufficient capacity for accepting generated volumes of types of waste over the life of the Project? Do third-party waste facilities have an adequate temporary waste collection area, a waste sorting facility, leachate methane and air emission controls in place? Do third-party waste facilities conduct water, soil contamination and air emissions monitoring at and around the facilities? <i>NOTE: Clients are required by national legislation to use licenced waste contractors to transport and treat/dispose of waste. Under PR3, Clients are also required to undertake an audit on their waste contractors used and also check that third-party waste treatment and disposal facilities (including government licensed landfill facilities) are being operated in a legal and environmentally responsible manner.</i>

PR3 Requirement	Issues to consider
Pollution Prevention and Control: The Client's environmental and social assessment process will determine the appropriate pollution prevention and control methods, technologies and practices ("techniques") to be applied to the Project.	Has the Client undertaken sufficient baseline surveys/research to define and understand the environment and social sensitivity of the Project setting? Did the Client compare several Project options and alternatives to try and reduce their environmental impact? For existing facilities did the Client conduct an environmental audit to identify any the potential for historical contamination to be present? Does the Client conduct regular monitoring of their environmental discharges? <i>NOTE: this could include the quality of discharged wastewater, agricultural run-off, air emissions, dust emissions, noise levels, etc.</i> Are the parameters monitored sufficient or should they be expanded? Has the Client identified techniques that can avoid or minimise environmental impacts? Have there been any site soil or groundwater investigations undertaken? If yes, what were the results?
The Client will structure the [Project to meet relevant EU substantive environmental standards, where these can be applied at the Project level.	Is the Client's Project aligned with the requirements of the EU Industrial Emissions Directive, even if located outside the EU? Has the Client undertaken a BAT assessment on specific processes or techniques? If this is a Project involving an upgrade of an existing facility or operation, does the Client have a realistic timetable to implement pollution prevention and control improvements?
Throughout the Project lifecycle, the Client will apply pollution prevention and control techniques consistent with the mitigation hierarchy to minimise potential adverse impacts on human health and the environment while remaining technically and financially feasible and cost effective.	Has the Client committed in their policies and procedures to regularly review the pollution prevention and control techniques used by the Project? Does the Client have sufficient financial, technical and human capacity and resources to implement required pollution prevention and control techniques? Does the Client have experienced professionals to manage environmental pollution risks?

PR3 Requirement	Issues to consider
Greenhouse Gases: The Client's environmental and social assessment process will consider alternatives and implement technically and financially feasible and cost-effective options to avoid or minimise Project-related GHG emissions during the design and operation of the Project. These options may include, but are not limited to, alternative Project locations, techniques or processes, adoption of renewable or low carbon energy sources, sustainable agricultural, forestry and livestock management practices, the reduction of fugitive emissions and the reduction of gas flaring.	Has the Client developed a list of stationary and mobile sources that may generate GHG emissions? Has the Client's selection of process technologies included ways to avoid or reduce GHG emissions? Has the Client considered the GHG emissions associated with the use of electricity? Does the Project's design include a range of energy efficiency measures? <i>NOTE: this could include low-energy light bulbs, insulation, energy recovery units, waste heat and vapour recovery equipment, solar panels on roofs, etc.</i> For agricultural Projects, have GHG emissions been considered in the design of the Project? Does the Project include the use of non-CO₂ GHGs? <i>NOTE: this may include sulphur hexafluoride which is often used in electrical transformers?</i> If this is a Project involving an upgrade of an existing facility or operation, does the Client have a plan to replace legacy refrigerants or other chemicals that could generate significant quantities of GHG?
For Projects that either: (1) have, or are expected to have, gross emissions in excess of 100,000 tonnes CO₂-equivalent annually, or (2) are expected to result in a net change in emissions, positive or negative, of more than 25,000 tonnes of CO₂-equivalent annually post-investment, the Client will quantify these emissions in accordance with EBRD Protocol for Assessment of Greenhouse Gas Emissions. The scope of GHG assessment shall include all direct emissions from the facilities, activities and operations that are part of the Project, as well as indirect emissions associated with the production of energy used by the Project. Quantification of GHG emissions will be conducted by the Client annually and reported to EBRD.	Does the Client have a mechanism in place to record their generation of GHG? If yes, is this based upon calculating estimates, or taking actual measurements? <i>NOTE: GHG calculations should include sources such as their vehicle fuel usage, electricity used from the grid, etc.</i> If the Client calculating their GHG generation per unit of production? Has the Client demonstrated a reduction in GHG emissions generated over time? Has the Client evaluated the GHG reduction of purchasing electricity from a renewable energy supplier? Is the Project generating more than 100,000 tonnes of GHG a year? If yes, then is the Project reporting these quantities to EBRD?

PR3 Requirement	Issues to consider
Safe Use and Management of Hazardous Substances and Materials: In all activities directly related to the Project, the Client will avoid or minimise the use of hazardous substances and materials, and consider the use of less hazardous substitutes for such substances and materials so as to protect human health and the environment from their potentially harmful impacts. Where avoidance or substitution is not feasible, the Client will apply appropriate risk management measures in order to minimise or control the release of such substances/materials into air, water and/or land resulting from their production, transportation, handling, storage, use and disposal relating to Project activities.	Has the Client undertaken an assessment of the hazardous substances and materials the Project will use, trying to substitute these for less hazardous types? Does the Project's design and use of hazardous substances and materials reflect GIP for the relevant industry sector? How do they assess and manage the risk of pollution from hazardous substances and materials, through their procedures and physical storage, handling, and use?
The Client will avoid the manufacture, trade, and use of hazardous substances and materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer.	Are hazardous substances and materials currently being used by the Project, prohibited under international treaty or convention? Has the Client created a list of chemicals present and in what quantity?
Clients who manage or use pesticides will formulate and implement an integrated pest management (IPM) and/or integrated vector management (IVM) approach for pest management activities. The Client's IPM and IVM programme will coordinate use of pest and environmental information together with available pest control methods, including cultural practices, biological, genetic and chemical means to prevent unacceptable levels of pest damage. When pest management activities include the use of pesticides, the Client will strive to reduce impacts of pesticides on biodiversity, human health and the broader environment and, more generally, to achieve a more sustainable use of pesticides as well as a significant overall reduction in the risks and uses of pesticides consistent with the necessary crop protection.	Does the Project involve the use of pesticides? If yes, what is the pest management plan for the Project? Is the pest management plan managed internally or contracted to a third party? If a contractor is used, how does the Client ensure the pest management plan meets PR3 requirements? Has the Client taken steps to ensure a sustainable approach to pesticide use, minimising the impact on biodiversity and human health?

A list of queries should be compiled following the review of all documentation received during Task 1. Use the 'Task 1 Key Findings' format presented in Module 1 of this training programme.

Task 2 – Site visit and discussions

The site visit and discussion with Client representatives should be used as an opportunity to discuss the list of queries compiled during Task 1. During Task 2, you may need to meet with the following (these meetings should be organised in advance):

- **Project Director** – for a brief introduction associated with the purpose and scope of your visit, to request the availability of other Client representatives that you need to meet, and to thank them for their general support;
- **Environmental Manager** – to interview them about the current environmental permitting and reporting requirements in line with national regulations and/or corporate standards; their management systems, existing laboratory facilities and monitoring results, environmental challenges, contracted services (e.g. waste management or pest control), discuss any regulatory or other third party inspections/audits and their outcomes, grievances received, and environmental pollution from nearby industrial activities; and
- **Site Managers** – to understand their knowledge and experience of applying pollution prevention and control techniques within an active site.

NOTE: The questions below may need to be modified to reflect the current status of the Project.

Interview with the Environmental Manager

The Environmental Manager should be interviewed to respond to the list of queries generated during Task 1. During this meeting, the following questions/discussion points could be covered:

- Please describe the main resources used by the Project.
- Do you keep regular and accurate records of used resources by type and volume and chemical and physical characteristics?
- Do you know the origins and the sources of resources used by the Project?
- Are these resources produced and generated in a legal and sustainable manner?
- Have there been any problems in obtaining access to these resources?
- How is the quantity of these resources being accurately monitored?
- What resource saving initiatives are underway or planned?
- What is the Project's water usage per day?
- What steps has the Project undertaken to reduce its water usage, and reuse/recycle wastewater?
- What internal resources do you currently have available to manage environmental risks and impacts?
- Are these resources sufficient?
- Describe the waste streams generated by the site and the destinations of the waste.
- How many waste contractors have been audited by the company?
- What were the main findings of these audits?
- What environmental KPIs does the company use
- What are the monitoring arrangements (frequency; type; locations; instrumental

- controls; laboratory equipment, etc.) for air, noise, and other emissions?
- How do you check the accuracy of monitoring data?
- How are monitoring results being reported to senior management?
- When was the last external audit undertaken at the site?
- How has the findings of the external audit been addressed?
- How are environmental incidents (spills, near misses, etc.) being recorded and corrective actions tracked?
- Are there regular environmental meetings with workers to discuss environmental management?
- How is feedback from these meetings used to improve the environmental performance of the Project?
- Does the Project use hazardous substances and materials?
- Are you aware about potential impacts that may result from incorrect storage of these materials? Do you have dedicated and sufficient storage facilities for hazardous materials and how often are storage areas checked?
- Is there any known or suspected soil or groundwater contamination at the site? If yes, what actions have been undertaken to investigate the impacted areas?
- Are there any underground tanks or other infrastructure at the site? If yes, are these regularly checked for integrity and leaks?
- What methods are used to monitor and ensure the integrity of the storage tanks and to identify and prevent any routine or accidental leaks?

Interviews with Site Managers

During the visit, discuss pollution prevention and control issues with the Site Manager or other representative, who has the day-to-day responsibility for environmental management. This is an opportunity to check the implementation of environmental management plans and other requirements, and to assess how well the operational team understand the risks associated with their operations. It is also an opportunity to raise awareness of pollution control mechanisms that could be applied. Before the interview, introduce yourself, explain the purpose of your audit, and inform them that you would appreciate their own views on environmental topics to improve your knowledge on the Project's activities.

During this meeting, the following questions/discussion points could be covered:

- What type and volumes of waste is generated and/or temporarily stored on site?
- How is waste is being segregated at the site?
- How do you raise awareness of waste segregation amongst the workforce?
- How are wastes leaving the site being recorded for their quantity? What equipment is being used and how accurate is it?
- What are the key challenges with waste collection, segregation, treatment and disposal?
- Do you have any challenges associated with contractors providing accurate waste transfer documentation?
- How are hazardous materials identified, stored, and used, and what procedures are used for the disposal of used containers?
- How are environmental incidents (e.g. spills) recorded and investigated?
- What streams of wastewater are generated onsite (e.g. industrial effluent; cooling water; sanitary wastewater; stormwater; snow melt, agricultural run-off,

etc.)?

- What are the current and/or planned arrangements for collection, segregation, treatment, analysis and final disposal of generated wastewater?
- Is there a laboratory onsite/offsite for analysing the quality of treated/discharged wastewater?
- Is the laboratory equipped with facilities and chemical agents to analyse and monitor all required parameters (e.g. Total Petroleum Hydrocarbons; Heavy Metals; salt; COD, BOD; temperature; odour; turbidity, etc.)?
- What are your dust abatement and suppression measures?
- How do you prevent the spread of dry materials produced or used by the Project or its by-products (e.g. cement, sand, minerals such as sulphur, phosphates, etc.)?
- What air emissions are generated at the Project site and what are the technical and operational measures to abate, measures and monitor the emissions?
- What are the locations of the air emission monitoring stations and how often measurements are taken?
- What environmental improvements would you like to see in the next 12 months?

During the site visit a range of areas should be inspected, including raw materials storage areas; manufacturing facilities; construction works, warehouses and Project storage areas, locations where hazardous materials are stored, and all waste storage areas; sludge and slurry ponds; cooling water ponds; water abstraction wells; water storage facilities; waste water collection and treatment facilities; emission sources, laboratory, etc.

The site visit should be used to check that the actual approach to manage pollution risks reflects what the Client has committed to in the Project documentation. The site visit should also be used to check all pollution control measures are aligned with GIP.

Digital photos should be taken of good, and bad practice, to present a balanced view on the Project's current pollution prevention status. The site visit is also an excellent opportunity to provide informal training to the Client's team and point out any concerns that you identify and indicate the actions required, as you proceed through the site visit locations.

NOTE: during the audit utilise the checklist overleaf to ensure that the EBRD's key requirements under PR3 have been covered.

Task 3 – Analysis and reporting using the EBRD format

The findings of Task 1 and 2 need to be analysed and presented using EBRD's Reporting Framework presented in Module 3 of this training programme.

During the analysis of the data collected consider the following:

- What are the key sensitivities of the Project's environmental and social setting?
- Has the Client applied the mitigation hierarchy approach to avoiding/minimising pollution risks to the extent possible?
- Are any additional measures required to monitor the Project's environmental performance?
- Are senior management informed about the Project's environmental risks and take part in internal environmental audits and other activities?
- Is sufficient budget allocated for pollution prevention and control measures and other environmental expenditures and investments?
- Does Project documentation reflect the activities being undertaken and the pollution prevention and control measures the Client has committed to?
- Are resources being accurately recorded and their use tracked over time?
- Does the Client have a process and required financial, technical and human resources in place to improve the environmental performance of the Project over time?
- Are workers able to recommend environmental improvements?
- Are any additional actions required to check the way in which the Client's waste management contractors are treating/disposing of waste generated by the Project?

Additional guidance, tools and reference documents

Additional EBRD guidance on the implementation of PR3 is provided here:

- BREF for Large Combustion Plants: <https://eippcb.jrc.ec.europa.eu/reference/large-combustion-plants-0>
- BREF for Waste Treatment: <https://eippcb.jrc.ec.europa.eu/reference/waste-treatment-0>
- BREF for Monitoring of Emissions to Air and Water from IED Installations: <https://eippcb.jrc.ec.europa.eu/reference/monitoring-emissions-air-and-water-ied-installations-0>
- BREF for Food, Drink and Milk Industries: <https://eippcb.jrc.ec.europa.eu/reference/food-drink-and-milk-industries>
- BREF for Intensive Rearing of Poultry or Pigs: <https://eippcb.jrc.ec.europa.eu/reference/intensive-rearing-poultry-or-pigs-0>
- BREF for Slaughter Houses and Animals By-Product Industries: <https://eippcb.jrc.ec.europa.eu/reference/slaughterhouses-and-animals-products-industries>
- EU Good Manufacturing Practice Guidelines (GMP): https://ec.europa.eu/health/documents/eudralex/vol-4_en

EBRD COVID-19 Resilience Framework - Local Environmental and Social Due Diligence Skills Capacity Building

PR3 – Resource Efficiency and Pollution Prevention and Control – ESDD Checklist

Please confirm all of the actions have been completed		Yes / No
<i>Existing documentation relevant to resource efficiency</i>		
3.1	A discussion with the Client associated with their use of resources has been completed. This has included the way in which they are monitoring their consumption of resources.	
3.2	The Project's water usage has been discussed along with the measures the Client is taking to avoid/minimise the quantity of water used.	
3.3	The Project's generation of waste types and volumes has been discussed, including how waste streams are being recorded.	
<i>Pollution prevention and control</i>		
3.4	A review has been undertaken of the Project's level of compliance with emission standards under national legislation and applicable EU standards.	
3.5	The Project's generation of GHG volumes has been checked to ensure that sources of GHG from fuel use and electricity are being included.	
3.6	The Project's use of hazardous substances and materials has been discussed with the Client, and storage areas have been inspected.	
3.7	The application by the Client of BAT and GIP has been evaluated.	
3.8	The status of contaminated areas (if present) has been discussed with the Client and inspected during the site visit.	