Environmental and Social Impact Assessment Volume 1: Non-Technical Summary

Caspian Sea Desalination Plant

ACWA

Prepared by:

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Acronyms and Abbreviations

ADSEA	Azerbaijan State Water Resources Agency
CESMP	Construction Environmental and Social Management Plan
CHA	Critical Habitat Assessment
CO2e	Carbon Dioxide Equivalent
DFIs	Development Finance Institutions
E&S	Environmental and Social
EPC	Engineering, Procurement and Construction
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMS	Environmental and Social Management System
GBVH	Gender-Based Violence and Harassment
GHG	Greenhouse Gas
GRM	Grievance Redress Mechanism
HDEC	Huadong Engineering Corporation
IESC	Independent Environmental and Social Consultant
IFC	International Finance Corporation
IWAC	Innovative Water Application Company
JBIC	Japan Bank for International Cooperation
NEXI	Nippon Export and Investment Insurance
NTS	Non-Technical Summary
O&M	Operation and Maintenance
OESMP	Operational Environmental and Social Management Plan
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
PPP	Public-Private Partnership
SEA/SH	Sexual Exploitation, Abuse and Sexual Harassment
SWRO	Seawater Reverse Osmosis
TMP	Traffic Management Plan
WETICO	Water & Environment Technologies Company

1.0 Introduction

1.1 Project Background and Rationale

Azerbaijan is facing increasing pressure on its water resources due to climate change, population growth, and rising demand. In response, the Government has introduced a range of initiatives under its National Strategy for the Efficient Use of Water Resources, including the development of seawater desalination.

In April 2023, the office of the President of Azerbaijan issued a decree authorising a pilot project for producing drinking water through seawater desalination. Building on that, in March 2024 the Ministry of Economy launched a public-private partnership (PPP) competitive tender to design, build, finance, and manage a desalination facility of 100 million m³/year capacity in Sumgayit. The Government of the Republic of Azerbaijan, acting through the Azerbaijan State Water Resources Agency (ADSEA) has appointed ACWA (earlier known as ACWA Power), through the first-ever PPP in Azerbaijan to develop a seawater reverse osmosis (SWRO) plant at Sumgayit Chemical Industrial Park.

The proposed desalination plant (the “Project”) will be located within the Sumgayit industrial area, near the Caspian Sea, on a site of approximately 30 hectares. The Project will have a production capacity of around 300,000 m³ of potable water per day. It will be developed and operated by a dedicated project company established in Azerbaijan, under a long-term agreement with the Azerbaijan State Water Resources Agency.

The Project aims to address increasing water demand in Baku and surrounding areas by providing a reliable and sustainable source of potable water. By introducing seawater desalination, the Project will diversify Azerbaijan’s water supply and reduce reliance on traditional surface water sources. It is also designed to improve the efficiency and resilience of the existing water supply system through the use of modern, energy-efficient technologies.

5 Capitals – part of SLR (5 Capitals) has been engaged by ACWA to undertake the independent assessment of potential environmental and social impacts, as well as certain other environmental & social related scope during the development process of the desalination plant including the Environmental and Social Impact Assessment (ESIA).

The Ministry of Economy has engaged a local consultant IQLIM, who has prepared the national ESIA in compliance with the Azeri regulations and standards and subsequently approved by the national environmental regulatory agency the Ministry of Ecology and Natural Resources (MENR) of the Republic of Azerbaijan.

A detailed review and gap analyses of the existing ESIA documentation prepared by IQLIM for the Project was undertaken. This ESIA incorporates additional assessments and updates to ensure consistency with applicable international requirements by the lenders.

1.2 Project Financing

At this stage, it is understood that ACWA is seeking an amount of project finance from financial Institutions (together “lenders”), that are Development Finance Institutions (DFIs), which will include the International Finance Corporation (IFC), Japan Bank for International Cooperation (JBIC) and Nippon Export and Investment Insurance (NEXI). This ESIA Non-Technical Summary (NTS) and broader Environmental and Social (E&S) package has been prepared for the potential financing of the Project by the above-mentioned targeted international lenders. The respective lenders will undertake a process of E&S Due Diligence/Review to ensure that the Project can be accepted for financing under their respective E&S Policies.

2.0 Project Summary

2.1 Key Project Information

The following table presents the key information related to the Project.

Table 2-1 Key Project Information

Project Title	Caspian Sea Desalination Plant
Project Developers	ACWA
Project Company	Caspian Sea Azerbaijan Project Company LLC
Off taker	Azerbaijan State Water Resources Agency
EPC Contractor	HDEC, IWAC, WETICO
Operation & Maintenance	ACWA Operations (previously NOMAC)
Environmental Consultant	5 Capitals – Part of SLR Consulting (5 Capitals)

2.2 Project Location

The proposed Caspian Sea Desalination Plant will be located within the Sumgayit Industrial Area, approximately 30 km northwest of Baku, in the Republic of Azerbaijan. Access to the site is via the southeastern gate, reached by a short gravel road off Samad Vurghun Road in Sumqayit.

The site lies in close proximity to the Caspian Sea shoreline, enabling direct access for seawater intake and brine discharge infrastructure. It is situated within the Sumgayit Chemical Industrial Park, a designated industrial zone under the Ministry of Economy, which hosts a range of manufacturing and processing facilities. The proposed Project site is a brownfield site which used to occupy a former wastewater treatment plant.

The geographical coordinates of the approximate centre of the Project site, based on the national coordinate system (projected UTM Zone 39N, WGS84 datum), are Easting 383,106.00 m and Northing 4,496,722.00 m. The site is strategically positioned to allow efficient integration with existing transportation corridors, utilities, and regional water distribution infrastructure, while avoiding the need for any land acquisition outside the industrial zone.

The location was selected due to:

- Proximity to the Caspian Sea for reliable seawater access;
- Availability of industrial land with appropriate zoning and supporting infrastructure;
- Reduced environmental sensitivity compared to undeveloped coastal areas;
- Accessibility via existing road networks linking Sumgayit to Baku and other urban centers.

Figure 2-1 indicates the project location in relation to Baku, the Caspian Sea, and surrounding infrastructure.

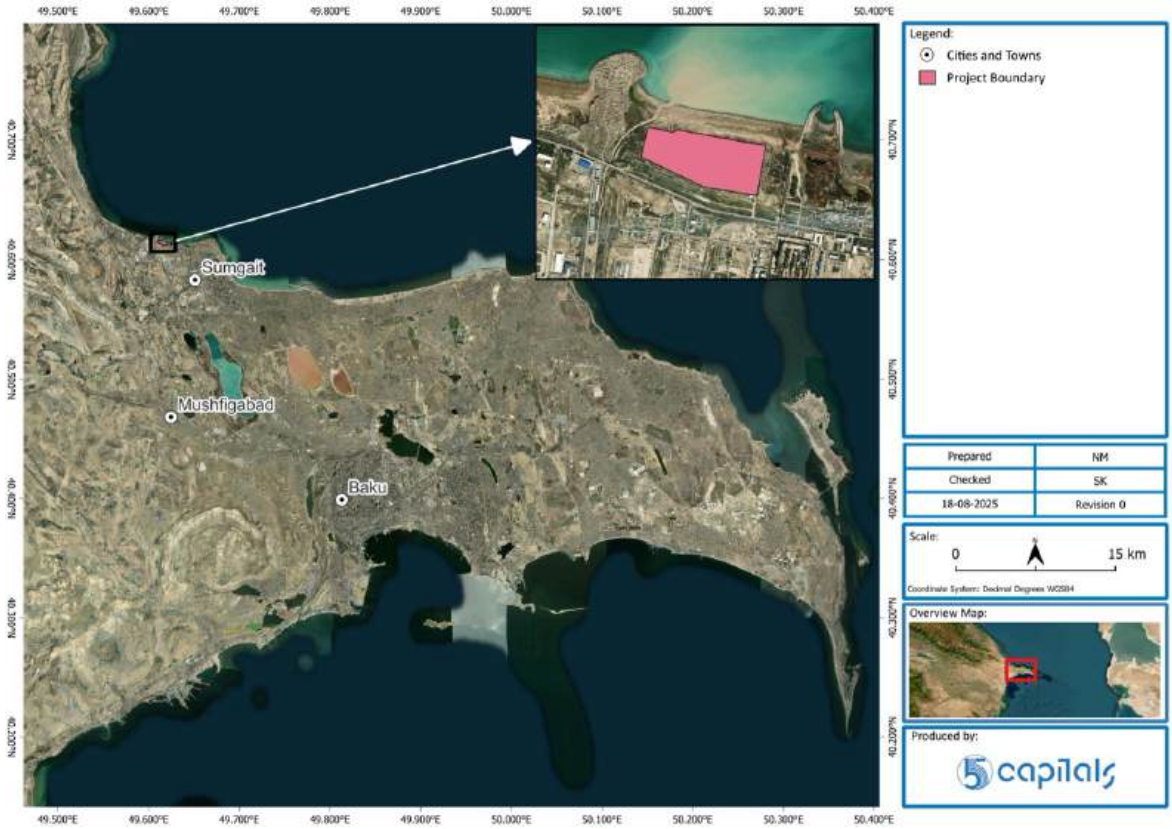


Figure 2-1 Project Location

2.3 Site Conditions and Surrounding Environment

2.3.1 Land Ownership and Project Agreements

The Project site is located within the Sumgayit Industrial Park, a designated industrial zone managed by the Sumgayit Industrial Authority under the Ministry of Economy. The land has been formally allocated to the Project through a lease agreement, granting the right to develop and operate the facility for the duration of the concession period.

A long-term water purchase agreement has also been established with the Azerbaijan State Water Resources Agency to supply potable water. These arrangements ensure that the Project is being developed on legally allocated land with clear tenure and in accordance with national requirements.

2.3.2 Existing Site Conditions

The Project site is a previously developed brownfield area that formerly accommodated a wastewater treatment plant, which ceased operations in 2010. The site is currently characterised by disturbed ground conditions, including remnants of old infrastructure, construction debris, and areas of waste accumulation.

Evidence of past industrial use includes concrete foundations, trenches, scattered debris, and localized areas of potential soil contamination. The site is directly connected to existing industrial infrastructure and is accessed via a gravel road from Samad Vurghun Street.

Vegetation is limited and consists mainly of grasses and small shrubs, with no rare or protected plant species identified. There is no permanent human settlement on the site, although occasional grazing by livestock has been observed. Wildlife presence is minimal,

with limited signs of small fauna such as reptiles. Overall, the site is considered to be of low ecological sensitivity due to its previously disturbed and industrial nature.

2.3.3 Surrounding Communities and Sensitive Receptors

The area surrounding the Project is predominantly industrial, with several residential communities located within a 5 km radius as indicated in Figure 2-2. The nearest residential area (Kimyachilar community) is approximately 420 metres from the site. Other nearby communities include Khazar Baghlari, Khazri, Sumgayit, and Haji Zeynalabdin.

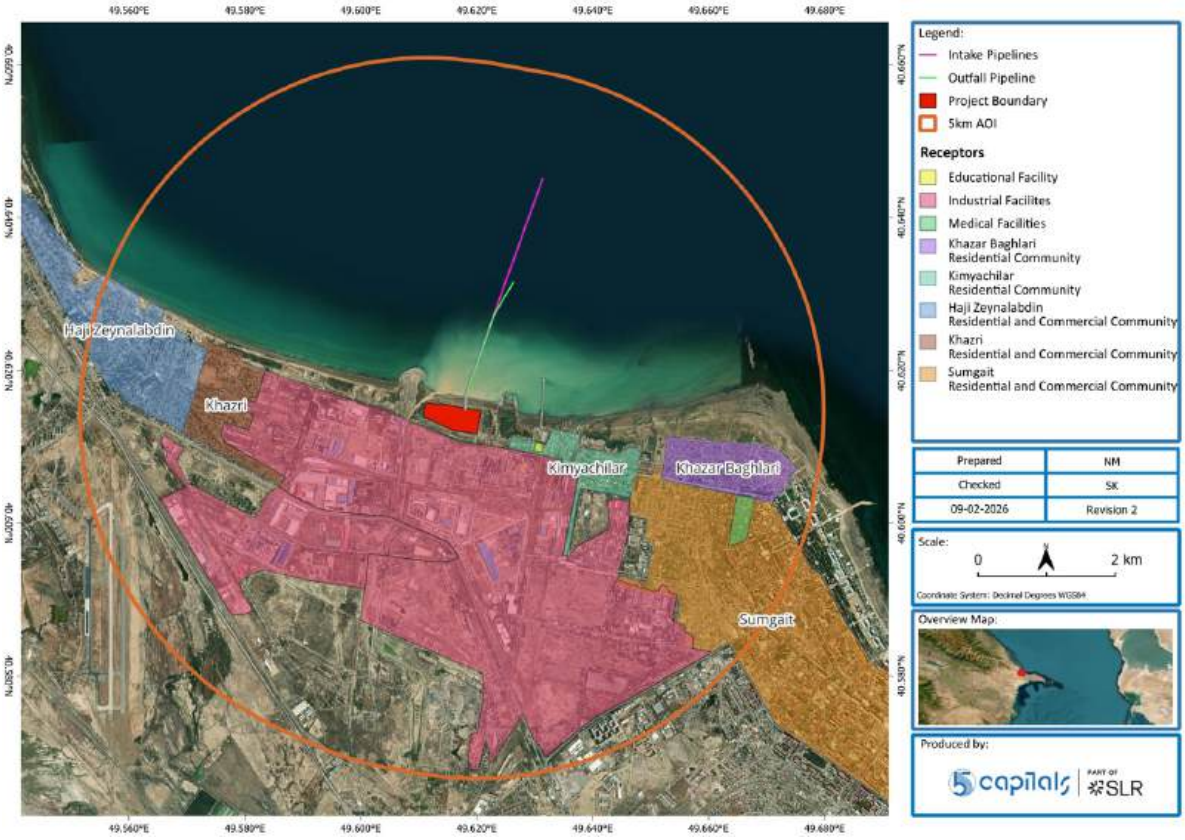


Figure 2-2 Receptors in Surrounding Area

In addition to residential receptors, several sensitive receptors have been identified in the wider area, including schools, a kindergarten, and a hospital. Industrial facilities such as petrochemical plants and a power station are also located nearby, reflecting the industrial character of the area.

The Project is well connected to existing infrastructure, including Samad Vurghun Street, which serves as a key transport route for industrial and local traffic.

2.3.4 Key Sensitivities

Key receptors that may be sensitive to Project activities include:

- Nearby residential communities
- Educational facilities and healthcare services
- Road users and local traffic
- Adjacent industrial facilities

These receptors have been considered in the ESIA to assess potential environmental and social impacts and to inform the development of appropriate mitigation measures.

2.4 Project Components and Design

2.4.1 Overview of the Desalination Process

The Project will produce potable water from seawater using SWRO technology. Seawater will be abstracted from the Caspian Sea through offshore intake pipelines and conveyed to the plant, where it will undergo a series of treatment processes to remove salts and impurities.

The process includes pre-treatment to remove suspended solids and protect the system, followed by reverse osmosis where freshwater is separated from saline water. The treated water is then stabilised and disinfected to meet drinking water standards before being supplied to the distribution network.

Supporting infrastructure includes power supply systems, chemical storage and dosing facilities, product water storage, and brine outfall infrastructure for the safe discharge of residual saline water back to the sea.

2.4.2 3.3 Reverse Osmosis System

The reverse osmosis (RO) system is the core of the desalination process. High-pressure pumps force seawater through specialised membranes that remove dissolved salts and impurities, producing freshwater (permeate) and concentrated brine (reject).

The system includes multiple stages to maximise efficiency and recovery. Energy recovery devices are integrated to reduce energy consumption by reusing pressure from the reject stream. This significantly improves overall plant efficiency and reduces operational costs.

2.4.3 Seawater Intake and Brine Outfall System

2.4.3.1 Seawater Intake

Seawater will be abstracted through two offshore pipelines extending approximately 3.5 km into the Caspian Sea. The intake system includes offshore towers and screening systems designed to minimise the entrainment of marine organisms. The pipelines will be partially or fully buried along their route to ensure stability and minimise environmental disturbance.

2.4.3.2 Brine Outfall

Concentrated brine generated during desalination will be discharged back to the sea through an offshore outfall pipeline located approximately 2 km from the shoreline.

The outfall is equipped with a multi-port diffuser system designed to promote rapid dilution and dispersion of the discharge, reducing potential impacts on the marine environment. The system is designed to meet applicable environmental standards and minimise effects on water quality and marine life.

2.4.4 Product Water Storage and Distribution

Treated water will be stored in two covered storage tanks with a combined capacity of approximately 70,000 m³. These tanks ensure a continuous and reliable water supply before distribution. The product water will meet national and international drinking water quality standards and will be transferred to the wider water supply network through dedicated infrastructure.

2.4.5 Supporting and Ancillary Facilities

The Project includes a range of supporting facilities required to ensure safe, efficient, and environmentally responsible operation of the desalination plant.

- Wastewater and Drainage Management: An on-site system will treat process wastewater and manage stormwater to ensure controlled discharge and minimise environmental impacts.
- Chemical Storage and Handling: Treatment chemicals will be stored and handled using secure, controlled systems with appropriate safety and containment measures.
- Site Infrastructure: Supporting infrastructure will include access roads, fencing, utilities, and operational buildings required for plant operation and maintenance.

2.5 Project Alternatives

A range of alternatives were considered during the development of the Project to identify the most suitable approach from technical, environmental, and operational perspectives.

The “No Project” option, under which the desalination plant would not be developed, was not considered viable as it would fail to address the increasing demand for potable water and future supply shortages in the region. It would also miss the opportunity to utilise an existing industrial (brownfield) site for critical water infrastructure.

Several potential locations were assessed based on factors such as seawater quality, environmental sensitivity, infrastructure availability, and proximity to demand centres. The Sumgayit area was identified as the preferred location due to its favourable marine conditions, existing industrial setting, and access to infrastructure. Within this area, the selected site provides suitable conditions for development while minimising potential environmental and social constraints.

Alternative design options were also evaluated, particularly for the seawater intake system. The selected design incorporates a flexible offshore configuration that can accommodate changes in Caspian Sea water levels while reducing the need for seabed disturbance. This approach offers both operational flexibility and environmental benefits compared to other options.

Different feedwater sources were considered, including shallow coastal waters and groundwater. However, these sources were found to be less suitable due to variable water quality and higher treatment requirements. Deep offshore seawater was therefore selected as the preferred source, as it provides more stable conditions and supports efficient and reliable plant operation.

Overall, the chosen Project configuration represents the most appropriate solution, balancing environmental considerations, technical feasibility, and long-term sustainability.

2.6 Associated Facilities

In accordance with IFC Performance Standard 1, associated facilities are those not part of the core Project but necessary for its operation. For this Project, these include a product water pipeline and an electrical substation, both to be developed by third parties.

A high-level environmental and social screening will be undertaken once further design details are available, with proportionate management measures defined as needed. Engagement with relevant authorities will also be carried out to confirm design assumptions and allow for refinement.

The product water pipeline will extend approximately 15 km to a southern reservoir, largely following existing infrastructure corridors and avoiding sensitive areas where practicable. It will be mostly buried, with temporary construction impacts and reinstatement of affected areas.

An electrical substation located adjacent to the Project site will provide power supply, connected to an existing nearby high voltage line, with a short connection via a new transmission link of less than 100m in length.

Both facilities will be developed alongside the Project and will be subject to further assessment as design information is finalised.

2.7 Project Construction and Commissioning

The Project will be delivered by an experienced international Engineering, Procurement and Construction (EPC) contractor consortium led by PowerChina Huadong Engineering Corporation Limited (HDEC), in partnership with Innovative Water Application Company (IWAC) and Water & Environment Technologies Company (WETICO). The consortium will be responsible for the detailed design, construction, and commissioning of the desalination plant in accordance with national requirements and international good practice.

2.7.1 Main Construction Activities

Construction will involve a combination of onshore and offshore works. Onshore activities will include site preparation, earthworks, excavation, and backfilling to establish foundations and plant infrastructure. Materials from the existing site, including concrete and soils, will be reused where suitable to reduce waste and minimise the need for imported materials. Civil works will include the construction of buildings, tanks, and supporting infrastructure, with ground improvement measures implemented to ensure long-term stability.

Marine construction activities will include the installation of offshore seawater intake and brine outfall pipelines, intake structures, and diffuser systems. These works will involve seabed preparation, dredging, pipeline installation, and backfilling. Dredged material will be managed through controlled sedimentation and reuse processes to minimise impacts on marine water quality and the surrounding environment.

All construction activities will be supported by appropriate equipment, temporary facilities, and resource supply arrangements, and will follow established procedures for waste management, material handling, and environmental protection.

2.7.2 Workforce and Logistics

At peak construction, the workforce is expected to reach approximately 1,800 personnel, comprising both local and international workers. Accommodation will be provided in existing facilities within Sumgayit and nearby areas, avoiding the need for dedicated construction camps. Workers will be transported to and from the site using dedicated buses, reducing traffic congestion and interactions with local communities.

2.7.3 Commissioning

Following construction, the plant will undergo a structured commissioning process led by the EPC contractor and supervised by the Project Company. This phase will involve inspection, testing, and start-up of all systems, including intake and pumping systems, pipelines, and treatment processes. Functional and performance testing will be undertaken to verify operational parameters and water quality. Any identified issues will be rectified prior to

handover, ensuring the facility operates safely, efficiently, and in accordance with design specifications.

2.8 Project Operation and Maintenance

The operation and maintenance of the desalination plant will be managed by ACWA Operations, a subsidiary of ACWA, under an organisational structure designed to ensure efficient, safe, and reliable plant performance in line with national requirements and international best practice. The facility will operate continuously with a high level of automation, supported by a skilled workforce of approximately 50 personnel, with a focus on local employment and capacity building. The plant is designed to achieve an overall water recovery rate of around 70%, producing potable water for distribution while safely discharging the remaining brine through the marine outfall in compliance with environmental standards. Operational activities will include system monitoring, maintenance of key infrastructure such as pumps and pipelines, and continuous water quality control. Dedicated environmental, health and safety functions will oversee compliance and ensure that operations are conducted in a safe and environmentally responsible manner.

2.9 Project Milestone

Key milestones on the current project timeline are shown in Table 2-2.

Table 2-2 Anticipated Project Timeline

Milestone	Scheduled Date
Notice to Proceed (NTP) and Financial Close	Q3 2026
Initial Commercial Operation Date (COD)	Q3 2028
Commercial Operation Date (COD)	Q1 2029
Operational Term	25 Years

3.0 ESIA Stage Stakeholder Engagement

3.1 Stakeholder Identification

Stakeholders were systematically identified during the ESIA process and will continue to be engaged throughout the Project lifecycle. They include:

- Affected stakeholders: Local communities, workers, and nearby land users who may experience direct or indirect impacts.
- Interest-based stakeholders: Organisations, civil society groups, and individuals with an interest in the Project, including those concerned with environmental and social issues.
- Decision-making stakeholders: Government authorities and institutions responsible for project approval, oversight, and regulation.
- Vulnerable groups: Individuals or groups who may be disproportionately affected due to factors such as age, gender, disability, or socio-economic conditions.

Key stakeholders include nearby communities (e.g. Kimyachilar, Khazri, Khazar Baghlari), local authorities in Sumgayit, national government agencies, industrial operators, and community groups. A structured stakeholder engagement approach has been developed to ensure appropriate consultation with all groups, including vulnerable populations.

3.2 ESIA Stage Consultation

Stakeholder engagement was undertaken during the ESIA stage to ensure that stakeholder views were considered in project planning and impact assessment. Engagement activities were carried out between December 2024 and January 2026 and included public meetings, focus group discussions, key informant interviews, door-to-door visits, and online consultations.

Approximately 50 to 60 consultation events were conducted with a wide range of stakeholders, including fishermen, local communities, government authorities, and specialised institutions. The objectives of these consultations were to share project information, understand stakeholder concerns, and gather feedback on potential environmental and social impacts.

Key issues raised by stakeholders included employment opportunities, water quality, environmental impacts, access to services, and inclusion of vulnerable groups. In response, the Project has committed to prioritising local employment, ensuring treated water meets applicable standards, implementing environmental monitoring, and maintaining ongoing stakeholder engagement.

3.3 Grievance Mechanism

A grievance redress mechanism (GRM) has been established to provide stakeholders with a clear and accessible process to raise concerns or complaints. The mechanism is free of charge, transparent, and culturally appropriate, and will remain in place throughout construction and operation.

All grievances will be recorded, assessed, and addressed in a timely manner, with follow-up actions tracked to ensure resolution. This process supports open communication with stakeholders and helps ensure that concerns are effectively managed.

4.0 Summary of Main Environmental and Social Impacts

Note: *this section provides a summary of key impacts as assessed in the ESIA. For full details of the assessment ESIA Volume 2 should be referred to.*

4.1 Air Emissions and Ambient Air Quality

4.1.1 Existing Environmental Setting

Ambient air quality monitoring was undertaken in 2024 at multiple locations within and around the Project site to establish baseline conditions. Monitoring was conducted over two campaigns (July and November) using calibrated equipment to measure key pollutants, including particulate matter ($PM_{2.5}$ and PM_{10}), gases (such as NO_2, SO_2, CO, and O_3), and volatile organic compounds (VOCs), alongside meteorological data.

The results indicate that air quality in the Project area is generally consistent with typical industrial environments. Most measured parameters were within applicable international guideline values. However, some localised exceedances were observed for particulate matter ($PM_{2.5}$), sulphur dioxide (SO_2), and ozone at a limited number of locations. Elevated concentrations of VOCs were also recorded at certain monitoring points.

Prevailing wind conditions are predominantly from the south, meaning that emissions from the industrial area are generally dispersed northwards. As a result, nearby residential communities located to the east and west are not typically situated in the main downwind direction under normal conditions.

Overall, the findings reflect existing background conditions influenced by surrounding industrial activities, traffic, and energy use. These baseline conditions provide an appropriate reference for assessing potential air quality impacts during the construction and operation of the Project.

4.1.2 Impacts during Construction

During construction, activities such as excavation, earthworks, movement of vehicles, and handling of materials are expected to generate dust. Additional emissions may arise from construction equipment, vehicles, and the use of fuels, as well as from materials such as paints and solvents. Temporary odours may also occur from on-site sanitation and wastewater storage.

Dust is expected to be the main impact, particularly within the Project site and nearby working areas. Some dust may also be generated along transport routes used to bring materials to site. These effects are expected to be short-term, localised, and mainly noticeable close to construction activities. Workers on site are likely to experience the highest exposure, while impacts on nearby communities and road users are expected to be limited due to distance and the industrial nature of the surrounding area.

Emissions from vehicles and equipment are expected to be relatively low and will disperse quickly in the open environment. Similarly, emissions from fuels and construction materials are expected to be small in scale and confined to specific areas. Any odours generated during construction are expected to be temporary and limited to the immediate site area.

Overall, construction-related air quality impacts are expected to be temporary, localised, and not significant beyond the Project site.

4.1.3 Impacts during Operation

During operation, the desalination plant is not expected to generate significant air emissions. Minor emissions may arise from occasional vehicle movements, maintenance activities, and the use and storage of treatment chemicals.

These emissions are expected to be very low in scale and similar to existing background conditions within the industrial area. As a result, no noticeable changes in air quality are expected for nearby communities or other receptors.

Odours are not expected during normal operation. Any potential odour would only occur under unusual conditions, such as equipment malfunction or poor maintenance, and would be temporary and limited to the site. Overall, air quality impacts during operation are expected to be minimal and not significant.

4.2 Climate Change Risk Assessment

The Project is located in a semi-arid region of Azerbaijan characterised by hot, dry summers and mild winters, with generally low and uneven rainfall. Long-term data shows a clear warming trend in the Project area, and future projections indicate that temperatures will continue to rise, with more frequent and intense heatwaves expected over time. Changes in rainfall are likely to be limited, although seasonal variability will persist. A key regional consideration is the continued decline in Caspian Sea water levels, driven by increased evaporation, which has been accounted for in the Project design.

The main climate-related risks for the Project include higher temperatures affecting equipment efficiency and energy demand, extreme heat impacting worker health and safety, and long-term changes in sea levels influencing marine infrastructure. Other risks such as flooding and drought are considered relatively low and are not expected to significantly affect operations.

The Project will generate greenhouse gas (GHG) emissions primarily from electricity use and limited fuel consumption. Estimated emissions are approximately 3,013 tonnes CO_2e during construction (total) and 95,130 tonnes CO_2e per year during operation.

Overall, the Project is considered resilient to future climate conditions and supports long-term water security, which is an important climate adaptation measure.

4.3 Noise and Vibration

4.3.1 Existing Environmental Setting

Baseline noise monitoring was carried out at several locations within and around the Project site, including nearby residential areas such as Kimyachilar. Measurements were undertaken during both daytime and nighttime periods using calibrated equipment, and results were compared with national and international guideline values.

The existing noise environment is influenced by a combination of sources, including nearby industrial activities, road traffic along Samad Vurgun Street, and natural factors such as wind and sea waves.

Results indicate that noise levels in some residential areas exceed recommended guideline limits, particularly due to ongoing industrial operations and traffic. However, noise levels remain within acceptable limits for industrial areas.

Overall, the Project is located within an already noisy industrial setting, with elevated background noise levels forming the baseline against which future impacts will be assessed.

4.3.2 Impacts during Construction

Construction activities will generate temporary increases in noise due to the use of machinery, vehicles, and equipment. Early works such as site clearance and ground levelling will involve equipment like excavators and bulldozers, resulting in moderate and short-term noise. As construction progresses, more intensive activities such as compaction, foundation works, pipeline installation, and marine works will involve heavier equipment (e.g. cranes, generators, compressors), which can produce higher and more noticeable noise levels.

Typical construction equipment generates noise levels of around 67 to 80 dB(A) at 10 metres, with higher combined levels when multiple equipment operate at the same time. Certain activities, such as compaction or drilling, may produce short bursts of higher noise. However, these impacts will be temporary, vary throughout the construction period, and occur within an already noisy industrial environment influenced by traffic and nearby industrial operations.

Construction traffic, particularly heavy trucks transporting materials, will also contribute to noise. On major highways, this increase is unlikely to be noticeable due to existing high traffic volumes. However, along local roads such as Samad Vurgun Road, there may be short-term increases in noise during peak construction periods. These effects will reduce once construction is completed.

Some vibration may occur during activities such as compaction and from heavy vehicle movements, but this will be limited to areas close to the site and will reduce quickly with distance. It is not expected to cause disturbance or damage to nearby receptors.

4.3.3 Impacts during Operation

During operation, the desalination plant will generate relatively low levels of noise. The main sources will be pumps and treatment equipment, most of which will be enclosed within buildings, significantly reducing noise outside the site. Typical pump noise is around 80 dB(A) at 1 metre, but this will be largely contained within plant structures.

Operational traffic will be limited to staff movements, occasional deliveries, and maintenance activities, and is not expected to noticeably affect surrounding noise levels. Overall, operational noise is expected to be low and not significant.

4.4 Geology, Soil, Surface and Groundwater

4.4.1 Existing Environmental Setting

4.4.1.1 Soil Quality

Baseline soil conditions show that the site has been heavily influenced by past industrial use, as it is located on a former wastewater treatment plant that closed in 2010 and was later used for informal waste disposal and filling. As a result, natural soils are largely absent, with an average 2.3 m thick layer of fill material (e.g. rubble and imported soil) covering the site.

Site investigations included 27 boreholes across the 26.8 ha area, with samples collected down to groundwater level (3–6 m depth). The results indicate:

- Alkaline soil conditions across the site (pH often above typical standards).
- Widespread presence of hydrocarbons, although mostly at low to moderate levels.
- Localised contamination, particularly in the western area (e.g. one borehole showing significantly elevated oil-related compounds at depth).

- Low levels of other contaminants, with most results within acceptable limits.
- Elevated heavy metals, but these are considered naturally occurring in the region rather than due to site activities.

Overall, when compared to applicable national and Dutch standards, soil quality reflects a disturbed industrial site with some localised contamination, rather than widespread or severe pollution. No soil remediation or large-scale off-site disposal is anticipated.

4.4.1.2 Groundwater

Groundwater beneath the site is shallow (around 6 m depth), flows toward the Caspian Sea, and is naturally saline and unsuitable for drinking or industrial use.

Sampling from multiple monitoring wells shows that groundwater is affected by contamination linked to past site activities. Petroleum-related substances (oil residues) are present across the site, with higher levels in some areas.

Organic chemicals (including solvents and fuel-related compounds) are detected, with higher concentrations in certain wells, indicating uneven distribution. Some compounds exceed international screening levels, particularly in specific locations. Heavy metals are generally low and not a major concern.

Overall, groundwater conditions indicate existing contamination, especially from hydrocarbons, with some areas more affected than others. The shallow groundwater and its flow toward the sea suggest a potential pathway for movement of contaminants.

4.4.1.3 Surface Water

The main surface water feature near the site is the Sumgaitchay River, located immediately to the west and flowing into the Caspian Sea. The river is seasonal, often dry for parts of the year, and highly dependent on rainfall.

Key baseline characteristics include:

- Highly variable flow, ranging from very low in dry periods to significantly higher during wetter years.
- No major flow regulation, meaning it responds directly to natural conditions.
- Influence from multiple discharge sources (around 28 identified along the monitored stretch).

Water quality monitoring shows that overall water quality is generally acceptable, particularly upstream. Higher turbidity and suspended solids are observed downstream near industrial areas. Elevated bacteria levels (e.g. E. coli and coliforms) indicate contamination from external sources. Slight increases in nutrients and some metals are present near the industrial zone.

In summary, the river shows moderate impacts from surrounding activities, with noticeable deterioration in water quality closer to industrial discharges, although not severe overall.

4.4.2 Impacts during Construction

Baseline investigations confirm that groundwater beneath the site already contains hydrocarbons including volatile compounds with the highest concentrations recorded in specific areas (notably around monitoring wells HW4, HW5 and HW6). Groundwater is shallow (around 6 m depth) and flows toward the Caspian Sea, increasing the importance of managing any disturbance during construction.

Groundwater dewatering will be required for excavation of foundations, pipelines, and intake/outfall structures over an estimated period of about 5 months. Pumping groundwater from these excavations may temporarily alter groundwater flow and draw contaminated water toward work areas, particularly in zones where hydrocarbons and solvents are already elevated. This may lead to short-term redistribution of contaminants within shallow groundwater, although the overall spread is expected to remain limited due to the natural flow toward the sea.

The extracted groundwater may contain contaminants at levels exceeding screening criteria. If not properly controlled, discharge could result in:

- Localised contamination of soil or surface water;
- Introduction of hydrocarbons or solvents into the Caspian Sea;
- Temporary surface effects such as oil sheen near discharge points.

Given the coastal setting and high dilution capacity of the marine environment, any effects are expected to be localised and temporary, mainly within the immediate discharge area.

Worker exposure (short-term) may occur during excavation and dewatering activities. This includes direct contact with contaminated groundwater or wet soils, inhalation of vapours released during pumping or excavation, particularly in deeper areas.

Accidental spills and leaks from fuels, lubricants, and construction chemicals present an additional risk. Given the existing contamination baseline, even small spills could add to or intensify localised soil and groundwater impacts, particularly in areas with shallow groundwater. Concrete wash water may also increase soil alkalinity if improperly managed.

Temporary waste storage and sanitation facilities could also affect groundwater if not properly managed. Leakage of hazardous waste, oils, or sewage could lead to localised infiltration into already impacted soils, potentially increasing contaminant levels in shallow groundwater.

4.4.3 Impacts during Operation

During operation, the plant will use seawater rather than groundwater, and no routine activities are expected to interact directly with the contaminated shallow aquifer. As a result, the Project is not expected to worsen existing groundwater conditions under normal operations.

The majority of the site will be paved, limiting infiltration. Fuel and chemical storage areas will be bunded and designed to contain spills (typically exceeding the volume of the largest tank). Wastewater and sludge will be managed in enclosed systems, largely below ground but sealed from surrounding soils. Transfer and unloading areas will include spill containment measures.

4.5 Terrestrial and Marine Ecology

4.5.1 Overall Ecological Context

The Project is located along the Caspian Sea coastline within the Caucasus Biodiversity Hotspot, a region of globally high biodiversity. However, the Project footprint itself is highly modified, having been previously used for industrial wastewater treatment and now consisting largely of hardstanding, disturbed ground, and reclaimed land.

As a result, while the wider region supports important ecosystems (coastal wetlands, steppe habitats, and marine environments), the Project site and immediate surroundings are of low ecological value, with biodiversity mainly limited to common and adaptable species.

4.5.2 Terrestrial Biodiversity

Within the Project footprint, vegetation is sparse and fragmented, largely confined to small patches of disturbance-tolerant species typical of semi-arid coastal environments. A total of 85 plant species were recorded during surveys, but these were predominantly common species, and no rare or protected flora were identified. More developed vegetation occurs outside the immediate footprint, particularly along the Sumgaitchay River corridor and roadside green areas, where moisture availability supports slightly richer plant communities.

Faunal communities within the terrestrial environment reflect the disturbed and urban-industrial nature of the site. Reptile surveys recorded only five species, all of which are common and widely distributed; the only species of note, the European pond turtle, is listed as Near Threatened but is not locally rare. Mammal surveys similarly identified a small number of adaptable species such as fox, hare, rodents, and bats, many of which utilise built structures or degraded habitats.

Birds represent the most dynamic component of terrestrial biodiversity. Seasonal surveys recorded 56 species, with particularly high numbers during migration periods. The Project lies within a regional migratory corridor along the Caspian coastline, and large flocks of waterbirds, gulls, and passerines pass through the area. However, the site itself does not provide important feeding, nesting, or resting habitats. Instead, it functions mainly as a transit zone, with birds passing overhead or using nearby coastal and offshore areas rather than the Project footprint itself.

Overall, the terrestrial environment is characterised by low habitat quality and limited ecological importance, supporting mainly common and disturbance-tolerant species.

4.5.3 Marine Biodiversity

The marine environment adjacent to the Project site shows similarly limited ecological sensitivity at a local scale. Benthic surveys indicate that the seabed is dominated by sandy, mobile sediments subject to wave and current action. This results in low species diversity and low biomass.

Fish surveys confirmed the presence of 32 species through a combination of net sampling and environmental DNA analysis. These include a mix of coastal, pelagic, and migratory species typical of the western Caspian Sea. While several protected species are known from the wider region (including sturgeon species), none were recorded during the surveys, and available evidence indicates that the area functions primarily as a feeding and migration corridor rather than a spawning or nursery ground. Sensitive receptors are therefore limited to early life stages such as eggs and larvae, which may occur seasonally.

The only marine mammal in the Caspian Sea, the Caspian seal, is known to migrate through the wider region. Although the Project overlaps a broad migration and feeding zone identified at the regional level, no seals were observed during baseline surveys, and there are no breeding or haul-out sites in proximity to the Project (the nearest being over 50 km away). Occasional sightings reported by local fishermen suggest that seals may pass offshore during migration periods, but the area is not a key habitat for the species.

4.5.4 Areas of Ecological Importance and Critical Habitat

Screening using internationally recognised datasets confirmed that no protected areas or Key Biodiversity Areas occur within 10 km of the Project site, although several are located at

distances of approximately 15 to 40 km. This indicates that the Project does not directly interact with designated areas of ecological importance.

A detailed Critical Habitat Assessment (CHA) was undertaken in line with IFC Performance Standard 6. This assessment considered both species and habitats across defined areas of influence. The findings indicate that the only Critical Habitat trigger relates to the Caspian seal at a regional scale, due to overlap with a large migration and feeding area. However, within the Project's specific footprint, there are no key aggregation, breeding, or feeding areas, and the Project represents only a very small fraction of this wider habitat.

4.5.5 Impacts during Construction

4.5.5.1 Terrestrial Ecology

The most direct impact will be localised habitat and vegetation loss within the desalination plant footprint and along the pipeline corridor. However, this impact is limited because the site is largely brownfield and the pipeline follows urban and industrial corridors. Some additional disturbance may occur where the pipeline crosses roadside vegetation, farmland edges, or small semi-natural patches. In these areas, vegetation clearance, soil compaction, and temporary habitat degradation may occur, although these effects are expected to be narrow in extent and reversible following reinstatement.

Faunal disturbance is expected due to noise, vibration, lighting, and human presence. Terrestrial fauna in the area mainly consists of common and adaptable species, and impacts are likely to be limited to temporary displacement or behavioural changes, with a low risk of incidental mortality. Similarly, migratory birds using the coastal corridor may temporarily avoid the area during construction, but no key habitats are affected, and impacts will be short-lived.

Additional construction-related risks include:

- Spread of invasive species, due to soil movement and equipment transfer;
- Attraction of pest species, if waste and food are not properly managed.

With mitigation, these impacts are expected to remain minor and temporary, with no lasting ecological effects.

4.5.5.2 Marine Ecology

Marine construction activities, particularly the installation of intake and outfall structures, will result in direct disturbance to the seabed in nearshore areas. This includes excavation, trenching, and sediment movement, which will temporarily affect benthic organisms such as worms, molluscs, and small invertebrates. Given the low diversity and already dynamic nature of the seabed, these impacts are expected to be localised and reversible, with natural recovery following completion of works.

Sediment plumes generated during construction may also temporarily increase turbidity and affect nearby benthic habitats and early life stages of fish, although these effects will be short-term and limited to the immediate area.

Mobile marine fauna, including fish and occasionally the Caspian seal, may be disturbed by underwater noise, vessel activity, and increased turbidity. Fish may temporarily avoid the construction zone, while seals may exhibit short-term avoidance behaviour. However, no important spawning or feeding areas are present in the Project area. Seal presence is limited to occasional transit and the main migration routes occur further offshore.

As a result, impacts on marine fauna are expected to be temporary and behavioural rather than ecological or population-level. There is also a low risk of introducing invasive marine species, primarily through vessel biofouling or imported equipment. This risk is limited due to the enclosed nature of the Caspian Sea but still requires standard controls.

Overall, construction-phase marine impacts are considered minor to moderate before mitigation, reducing to minor or negligible after mitigation, and are short-term and spatially confined.

4.5.6 Impacts during Operation

4.5.6.1 Terrestrial Ecology

During operation, impacts are primarily associated with the permanent presence of infrastructure, including the desalination plant and product water pipelines. These will result in long-term habitat alteration, with areas remaining cleared and preventing natural vegetation recovery. However, given that the site is already highly modified, this represents a small incremental change. The pipeline and associated infrastructure may create minor movement barriers for small fauna, but in a landscape already fragmented by roads and development, this effect is negligible.

4.5.6.2 Marine Ecology

Operational impacts in the marine environment are mainly associated with the seawater intake system and brine discharge.

The intake system may cause:

- Entrainment of plankton, fish eggs, and larvae;
- Impingement of small fish and invertebrates on intake screens.

These effects are expected to be highly localised and limited to common species in the immediate intake area.

The discharge of brine effluent will create a small mixing zone of elevated salinity and density near the outfall. This may temporarily affect benthic organisms and cause some fish to avoid the immediate area. However, hydrodynamic modelling shows rapid dilution of brine with impacts confined to a small area near the diffuser and the surrounding waters remain suitable for marine life.

Potential indirect effects on higher trophic levels, including the Caspian Seal, are considered negligible because the area is not an important feeding ground and since seals can avoid unfavourable conditions and since no aggregation areas are present nearby.

With appropriate design and management, operational marine impacts are not expected to be significant.

4.6 Marine Water and Sediment Quality

Site-specific bathymetric surveys undertaken for the Project indicate that the nearshore seabed off Sumgait is shallow, gently sloping, and morphologically uniform, typical of a low-energy depositional coastal environment. Localised features include sporadic rocky patches and isolated stone blocks, particularly along parts of the coastline and within limited offshore zones. Review of satellite imagery indicates the natural discharge of turbid water from the Sumgaitchay River into the receiving marine environment.

Baseline seawater quality monitoring indicates that the marine environment in the Project area is generally in good chemical condition, with most parameters compliant with applicable

national standards. Microbiological parameters indicate elevated coliform counts in some coastal samples, reflecting localised anthropogenic influences typical of nearshore environments.

Marine sediments within the Project area are predominantly sandy with varying grain sizes and shell fragments, with occasional silty deposits. This composition is consistent with the observed depositional environment and bathymetric profile. Overall, sediment quality is representative of background, non-contaminated conditions, with no evidence of significant anthropogenic pollution.

4.6.1 Impacts during Construction

During construction, activities in the nearshore environment, particularly dredging, trenching, and the installation of intake and outfall infrastructure will temporarily disturb seabed sediments and increase turbidity in the surrounding waters. Approximately 285,000 m³ of seabed material will be dredged, generating sediment plumes as fine particles are suspended in the water column. However, dispersion modelling undertaken by DHI for the Project demonstrates that these plumes remain largely confined to the immediate vicinity of the works (see Figure 4-1). Most sediment deposition occurs within the dredged trench itself, with deposition outside this footprint rapidly reducing to negligible levels, typically less than 1 cm even under conservative assumptions.

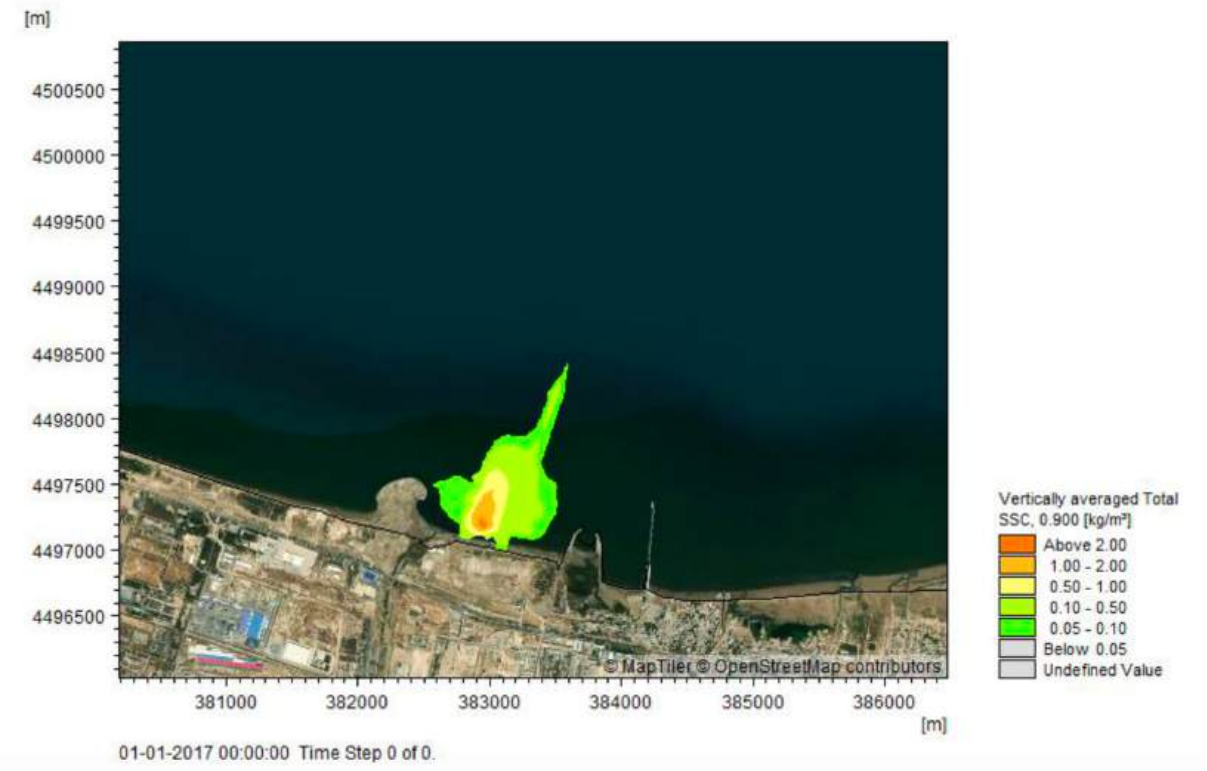


Figure 4-1 Sediment Plume Modelling Result – 5% Spill at CSD (DHI, 2026)

The modelling further indicates that the most noticeable increases in suspended sediment concentrations are associated not with the dredging vessel, but with the controlled discharge of water from onshore sedimentation basins. Even in this case, elevated turbidity is short-lived and decreases rapidly with distance, typically returning close to background levels within around 100 metres. As a result, impacts on marine water quality are expected to be

localised and temporary, with natural dispersion processes enabling relatively quick recovery once construction activities cease.

Importantly, sediment quality testing confirms that seabed materials are not significantly contaminated, meaning that sediment disturbance does not introduce pollutants into the marine environment but rather results in short-term physical effects such as reduced water clarity.

Other potential sources of impact, including discharge of supernatant water, groundwater from dewatering, and stormwater runoff, are also expected to result in only minor and localised changes in water quality. These are either controlled through treatment (in the case of groundwater) or reflect mobilisation of existing site conditions rather than new sources of contamination.

4.6.2 Impacts during Operation

During operation, the primary interaction with the marine environment arises from the continuous discharge of concentrated brine generated by the desalination process. This brine, which has a higher salinity and density than ambient seawater, is discharged through a purpose-designed multi-port diffuser system intended to maximise dilution and dispersion. Hydrodynamic and dispersion modelling undertaken by DHI for the Project shows that the discharged brine behaves predictably, remaining largely confined to near-bottom waters due to its density.

The modelling indicates that measurable increases in salinity are limited to a relatively small area around the outfall. A typical increase of around 1 PSU (Practical Salinity Unit) extends to approximately 300 metres from the diffuser under average conditions, with a maximum extent of about 500 metres under conservative scenarios. See Figure 4-2. Beyond this zone, salinity levels return to natural background conditions. Importantly, the modelling confirms that there are no significant changes in salinity in mid-water or surface layers, meaning that the wider marine environment remains unaffected. Time-series analysis also shows no evidence of long-term accumulation of salinity, demonstrating that natural currents and mixing processes provide sufficient flushing to disperse the discharge over time.

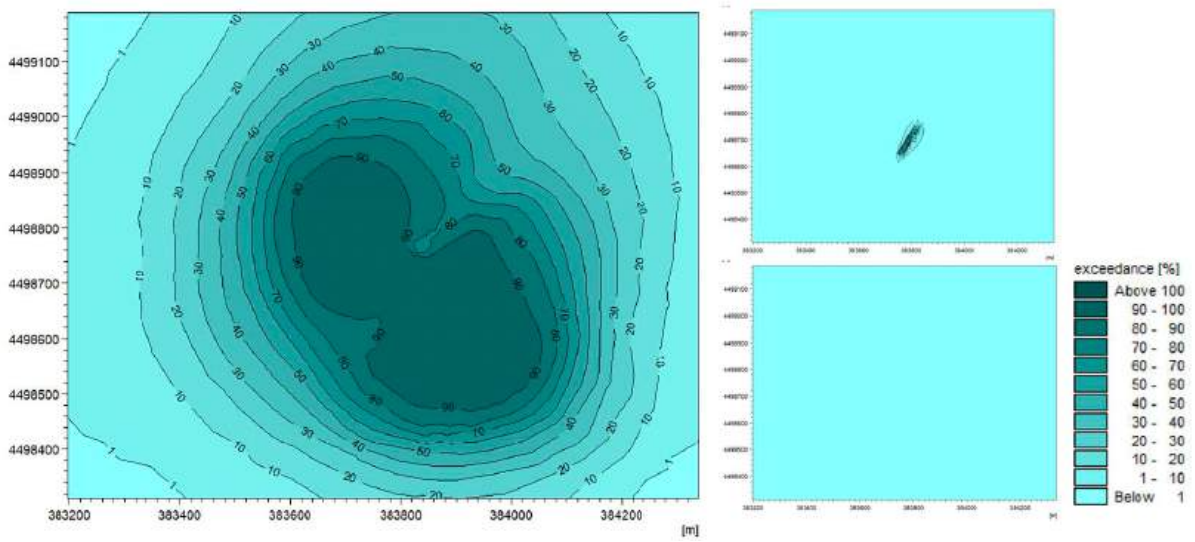


Figure 4-2 Exceedance Time of the I PSU Threshold Level in Salinity Difference

Potential effects on sediment quality are similarly limited. While slightly denser brine may settle near the seabed close to the outfall, any resulting changes in sediment conditions are expected to be minor, localised, and reversible.

Additional operational discharges, including treated process water and residual chemicals, will be carefully managed and controlled to meet applicable standards, ensuring that no untreated or harmful substances are released.

Overall, the modelling confirms that operational impacts are predictable and confined to a small area immediately surrounding the outfall. With the incorporation of appropriate design measures and ongoing monitoring, the discharge is expected to comply with environmental standards and good international practice.

4.7 Landscape and Visual

The landscape character of the Project area is defined by a predominantly industrial and previously disturbed setting. The Project site forms part of a modified coastal-industrial landscape shaped primarily by past infrastructure use rather than natural features.

As outlined earlier, the site itself is located on the footprint of a former wastewater treatment plant that ceased operations in 2010. While most of the above-ground structures have been dismantled, remnants of the previous facility remain visible, including concrete foundations and areas of construction debris and rubble. As a result, the site exhibits clear brownfield characteristics, with limited aesthetic or ecological value and a visual context already influenced by prior development.

Within this context, the proposed development, comprising a low-rise, functional concrete structure, will introduce a change to the immediate visual environment. However, given the already altered and industrial nature of the site and its surroundings, this change is considered to be a continuation of the existing landscape pattern rather than a transformation of a sensitive or high-value landscape.

4.8 Archaeology and Cultural Heritage

4.8.1 Existing Setting

The Project is located within Sumgait, a relatively modern industrial city established in 1944 along the Caspian coast. Unlike older historic centres in Azerbaijan, the area has limited deep archaeological layering due to its largely planned development during the Soviet period. The Project site itself lies within a highly urbanised and previously developed area, further reducing the likelihood of encountering significant archaeological remains. Desktop studies, consultations with national experts, and community engagement have not identified any known archaeological sites or cultural heritage features within or immediately adjacent to the Project footprint.

Nevertheless, the wider Sumgait region does contain elements of historical and cultural interest. Nearby settlements such as Jorat include heritage features reflecting earlier habitation, including the 16th-century Haji Majid Bath, as well as archaeological finds from the medieval period discovered during past industrial development. These findings, now housed in local museums, demonstrate that while the immediate Project area is of low archaeological sensitivity, the broader region has a longer cultural history.

Given this context, the potential for previously unidentified subsurface remains cannot be entirely excluded, particularly during excavation works. However, the likelihood is considered low, and any such finds would be managed through a standard “chance find” procedure to ensure appropriate protection and documentation.

In addition to physical heritage, the area supports a range of living cultural practices typical of Azerbaijan. These include widely observed traditions such as Novruz celebrations, religious festivals (Eid), tea culture, traditional food preparation, and folk dance. These practices are embedded within community life and are not location-specific to the Project

site. Overall, the baseline indicates low sensitivity for physical cultural heritage within the Project footprint, alongside the presence of broader regional cultural values and intangible heritage that remain unaffected by the Project.

4.8.2 Potential Impacts during Construction and Operation

The Project is located within an urban and previously developed area where no known archaeological sites have been identified, and the likelihood of encountering significant cultural heritage remains is considered low. However, as with any excavation works, there remains a remote possibility that previously unknown buried artefacts could be encountered during the early stages of construction. In such cases, a formal Chance Find Procedure will be implemented. This requires immediate suspension of works in the affected area, notification of relevant specialists and authorities, and appropriate assessment and protection of any findings.

During operation, no further ground disturbance is required, and therefore no impacts on archaeological resources are anticipated.

4.9 Wastes and Waste Management

Waste and wastewater management in Azerbaijan remains an evolving system, with infrastructure improvements in recent years but continuing capacity and service gaps, particularly outside major urban areas. Within Sumgait, however, established systems are in place, including a municipal solid waste collection service serving over 400,000 residents, a rehabilitated landfill located approximately 9 km from the Project site, a dedicated hazardous waste landfill about 21 km away, and a centralised wastewater treatment plant serving most of the city. While these facilities provide an operational framework for managing waste streams, their capacity and efficiency are considered moderately sensitive, reflecting broader national challenges in waste management and treatment.

Against this baseline, the Project will generate a range of waste streams during construction and operation, including non-hazardous waste, hazardous materials, and wastewater. During construction, higher volumes of waste will be produced from site activities and workforce presence, which could place temporary pressure on existing infrastructure if not properly managed. Risks primarily relate to improper handling or disposal, which could lead to localised environmental issues such as contamination, nuisance, or strain on facilities. During operation, waste generation will be lower and more predictable, consisting mainly of domestic waste, maintenance materials, process-related hazardous waste, and liquid effluents such as brine and treated wastewater. In both phases, all waste streams will be managed through licensed contractors and existing treatment and disposal facilities, with on-site segregation, storage, and treatment controls in place. As a result, potential impacts are expected to remain minor, localised, and well within the capacity of the existing waste management system, with no significant long-term effects anticipated.

4.10 Socioeconomics

4.10.1 Existing Socioeconomic Setting

The study area comprises four settlements near the Project, i.e., Haji Zeynalabdin, Khazar Baghlari, Kimyachilar, and Khazri with a total population of approximately 50,900 (2025). Household surveys (367 households; 1,417 individuals) indicate a balanced gender distribution, with predominantly male-headed households (83%). Communities are largely Azerbaijani-speaking (≈96%) with no Indigenous Peoples present. The area is characterised by mixed urban and peri-urban conditions, moderate access to infrastructure (water,

electricity, waste collection), but gaps in sewerage and housing tenure, particularly in Khazri and among vulnerable groups.

Livelihoods are primarily based on salaried employment (54%), supplemented by informal work and small-scale activities. Average household incomes are significantly below the Sumgait average, with widespread financial vulnerability reflected in high borrowing rates and limited savings. Employment opportunities are constrained, particularly for women, and gender disparities persist in income, asset ownership, and labour participation. Internally Displaced Persons (IDPs) form an important vulnerable group in the area, alongside low-income households, elderly-headed households, and those with disabilities. Further detailed demographic, income, vulnerability, and infrastructure data are presented in Volume 2 of the ESIA.

Fishing represents a small but locally important livelihood within the study area. A total of 26 fishermen operate from Pier 63 (approximately 1.5 km from the Project), using five motorised boats on a seasonal basis (September to May). Fishing activities are concentrated around 10 km away, east of the pier, away from the Project's offshore infrastructure, and are governed by permits and spatial arrangements among fishermen. Approximately 7% of surveyed households rely on fishing as a primary income source, with fishing also contributing to household expenditure and local food supply. However, fishermen report declining catches over the past decade due to environmental pressures and increased competition, as well as seasonal restrictions affecting income. Overall, while fishing is not a dominant livelihood, it remains socioeconomically relevant for a specific group within the community.

4.10.2 Impacts during Construction

During construction, the Project will generate temporary employment opportunities (up to approximately 1,800 workers), providing short-term economic benefits through wages and local spending. The proportion of these roles that can be filled by the local workforce will be determined by the EPC contractor based on the availability of suitably skilled labour in the area. While this is expected to result in some local employment, the overall impact remains limited due to the temporary nature of the work and the specialised skills required, meaning that a portion of the workforce is likely to be sourced from outside the area. As a result, the overall economic benefit is assessed as minor, although some indirect benefits may arise through local procurement of goods and services and limited skills transfer to local workers.

At the same time, the influx of workers may place additional pressure on local infrastructure and services, including transport, utilities, healthcare, and waste systems, particularly when combined with existing industrial activity in Sumgait. This impact is considered moderate but temporary. Potential increases in rental prices and demand for housing may occur but are expected to be limited given the scale of the city. Vulnerable groups, including women, low-income households, and persons with disabilities, may face barriers in accessing employment opportunities and could be disproportionately affected by economic pressures. Community safety risks, including traffic, worker–community interactions, and broader social concerns, remain low but require management.

With respect to fishing livelihoods, detailed baseline surveys and stakeholder engagement confirm that fishing activities are small-scale, seasonal, and located outside the Project's area of influence (approximately 10 km from main fishing grounds). The Project area is also within a restricted coastal zone where fishing is not formally permitted. No physical or economic displacement is anticipated, and fishing routes and access will not be affected. Temporary offshore works will be clearly demarcated to ensure safety. Overall, impacts on fishing livelihoods are assessed as minor, with continued engagement and grievance mechanisms in place.

4.10.3 Impacts during Operation

During operation, the Project will create a smaller but longer-term workforce, providing more stable employment opportunities compared to construction. Although job numbers will be limited, the longer duration of employment and the technical nature of operations offer greater potential for skills development and capacity building within the local workforce. This represents a modest but positive contribution to the local economy.

No adverse impacts on fishing livelihoods are expected during operation. The intake and outfall infrastructure are located outside traditional fishing areas, and modelling and consultations confirm that access to fishing grounds and navigation routes will remain unaffected. Fishing activities are therefore expected to continue unchanged. Ongoing stakeholder engagement and monitoring will ensure that any concerns are addressed promptly.

A key positive impact of the Project during operation is the improvement in potable water supply. The desalination plant will contribute to meeting increasing water demand in Baku and surrounding regions, enhancing water security, reducing reliance on traditional freshwater sources, and supporting long-term resilience. This benefit has been strongly supported by stakeholders and is considered a significant positive outcome of the Project.

4.11 Community Health, Safety and Security

The Project is expected to result in mostly temporary and localised impacts on community health, safety and security during construction, with substantially lower risks during operation. During construction, nearby communities may experience short-term nuisance effects such as dust, noise and minor odours, particularly along access roads and haul routes. These impacts are expected to be limited, reversible, and not significant with standard mitigation measures in place. The most notable risk during this phase relates to the influx of a large workforce (up to approximately 1,800 workers), which may influence community dynamics. Potential issues include pressure on local services, increased risk of communicable diseases, and minor increases in petty crime. There is also a risk of social tensions or inappropriate behaviour, including gender-based risks, although these are considered manageable through measures such as worker codes of conduct, cultural awareness training, health screening, and grievance mechanisms.

Construction activities will also increase traffic movements, including heavy vehicles transporting materials, which may elevate road safety risks for local communities and road users. However, these risks are primarily confined to transport routes rather than the Project site itself and will be managed through a Traffic Management Plan, defined routes, and safety controls. Broader community safety risks associated with construction such as access to work areas, exposure to machinery, or marine works will be mitigated through site fencing, controlled access, signage, and public awareness measures. Security risks, including potential misuse of authority by security personnel, are recognised but addressed through training, adherence to international standards, and implementation of a Security and Human Rights Management Plan. Overall, with mitigation in place, construction-phase risks are considered moderate before controls and low after mitigation.

During operation, risks to community health and safety are significantly reduced due to the controlled and routine nature of plant activities and the much smaller workforce. The facility will operate within a secured industrial site with restricted access, enclosed systems for chemical handling, and continuous monitoring of water quality, ensuring no routine exposure pathways to the public. Traffic levels will be minimal compared to construction, and marine safety will be maintained through clearly demarcated zones and navigation controls. While there remains a low risk of accidental events such as chemical spills or fires, these will be

managed through established emergency preparedness and response systems, regular training, and coordination with local authorities.

4.12 Labour and Working Conditions

The Project will generate employment during both construction and operation, with associated labour and working condition risks that are typical for large infrastructure developments. These risks are higher during construction due to the scale of activities and workforce, and lower during operation due to more controlled and routine processes.

During construction, the main risk relates to Occupational Health and Safety (OHS), as activities such as working at height, heavy lifting, excavation, electrical works, and marine operations present inherent hazards. Additional risks include heat stress, fatigue, exposure to dust and noise, and potential interactions with traffic and adjacent industrial activities. These risks will be managed through a comprehensive OHS management system, including training, supervision, use of Personal Protective Equipment (PPE), and emergency preparedness measures. With these controls, residual risks are expected to be low and manageable.

Labour-related risks during construction also include potential issues related to forced labour, child labour (particularly within the supply chain), and non-compliance with labour standards. While the overall risk is considered low, the Project will implement strict recruitment procedures, supplier due diligence, and labour monitoring systems to ensure compliance with national laws and international standards, including prohibition of forced and child labour.

Working conditions such as excessive working hours, inadequate accommodation, and limited access to grievance mechanisms may also arise if not properly managed. The Project will address these through a Labour and Working Conditions Management Plan, ensuring fair wages, regulated working hours, adequate welfare facilities, and accessible grievance mechanisms for all workers, including contractors and subcontractors. Worker accommodation, where required, will meet international standards, including appropriate facilities, hygiene, and gender-sensitive arrangements.

Gender-related risks are recognised, particularly in a male-dominated construction environment. These include risks of Gender-based Violence and Harassment (GBVH), discrimination in recruitment and wages, and unequal access to employment opportunities. The Project will implement a Gender Management Plan, codes of conduct, training, and confidential reporting mechanisms to prevent and address such risks, alongside a commitment to equal opportunity and non-discrimination.

During operation, labour and working condition risks are significantly reduced due to the smaller workforce and controlled environment. OHS risks are primarily associated with plant operations, including exposure to chemicals, electrical systems, confined spaces, and machinery. These will be managed through established operational procedures, regular training, PPE, and monitoring systems.

4.13 Human Rights Impacts Assessment

The Project has the potential to affect a range of human rights during both construction and operation, primarily related to labour conditions, worker welfare, and community interactions within the Project Area of Influence. Impacts are more pronounced during construction due to the large workforce and complex activities and reduce during operation as activities become controlled and workforce numbers decline.

Key human rights risks relate to workers and nearby communities during construction include OHS risks from construction activities, labour rights risks such as potential for forced

labour, unfair working conditions (e.g., excessive working hours, inadequate accommodation, or limited access to grievance mechanisms), discrimination and access to employment, gender-related risks and those related to freedom of association, i.e., potential restrictions on workers' ability to organise or join trade unions if not properly safeguarded.

These risks are addressed through a comprehensive framework including a Labour and Working Conditions Management Plan, Human Resources policies, Supply Chain Management System, and a Security and Human Rights Management Plan.

Human rights risks during operation are similar in nature but significantly reduced in scale due to a smaller workforce and controlled processes.

4.14 Impacts from Unplanned Events

Unplanned events may arise during both construction and operation due to equipment failure, human error, or unforeseen process upsets. Typical risks include fires, spills, uncontrolled releases, and accidents involving hazardous materials or marine works.

During construction, the main risks relate to fire incidents, accidental release of fuels or chemicals, dredging-related turbidity releases, and increased road traffic accidents. These events could temporarily affect air quality, soil and groundwater, marine water quality, or community safety. However, most impacts would be short-term, localised, and reversible, particularly where rapid response measures are implemented. Construction risks will be managed through the Construction Environmental and Social Management Plan (CESMP), including proper storage of hazardous materials, spill prevention and response procedures, traffic management, and worker training.

During operation, risks are lower due to controlled processes but may include chemical leaks, fires, or process upsets leading to non-compliant discharges. The plant design incorporates multiple safeguards such as containment systems, monitoring, and emergency shutdown mechanisms to prevent and control such events. Overall, unplanned impacts are considered unlikely, and where they occur, they are expected to be localised and effectively managed through emergency preparedness and response systems.

4.15 Cumulative Impacts

Cumulative impacts arise from the interaction of the Project with existing and planned industrial activities in the wider Sumgait coastal and industrial area. Key receptors considered include air quality, noise, marine environment, traffic, waste infrastructure, and community health.

Given the Project's relatively modest scale and its location within an established industrial zone, cumulative impacts are generally limited. Construction activities may temporarily add to existing pressures, particularly in relation to traffic, noise, and demand on waste management systems. However, these effects are short-term and manageable through standard mitigation measures such as traffic management, waste handling controls, and scheduling of activities.

Operational impacts are minimal, as the Project does not involve significant emissions, and discharges (primarily brine) are distinct in nature and rapidly diluted. As a result, the Project is not expected to materially contribute to existing environmental pressures such as air pollution or marine contamination.

4.16 Transboundary Impacts

Transboundary impacts refer to effects extending beyond Azerbaijan's national boundaries, particularly relevant given the Project's location on the Caspian Sea, a shared water body.

The assessment concludes that the Project will not result in transboundary impacts. This is based on the limited spatial extent of marine works, the negligible scale of seawater abstraction relative to the Caspian Sea, and the rapid dilution of brine discharge demonstrated through modelling. Any changes in water quality are expected to remain highly localised near the outfall, with no pathway for impacts to extend beyond national waters.

The Project has been designed in line with regional environmental obligations, including the principles of the Tehran Convention, ensuring pollution prevention, monitoring, and protection of marine ecosystems.

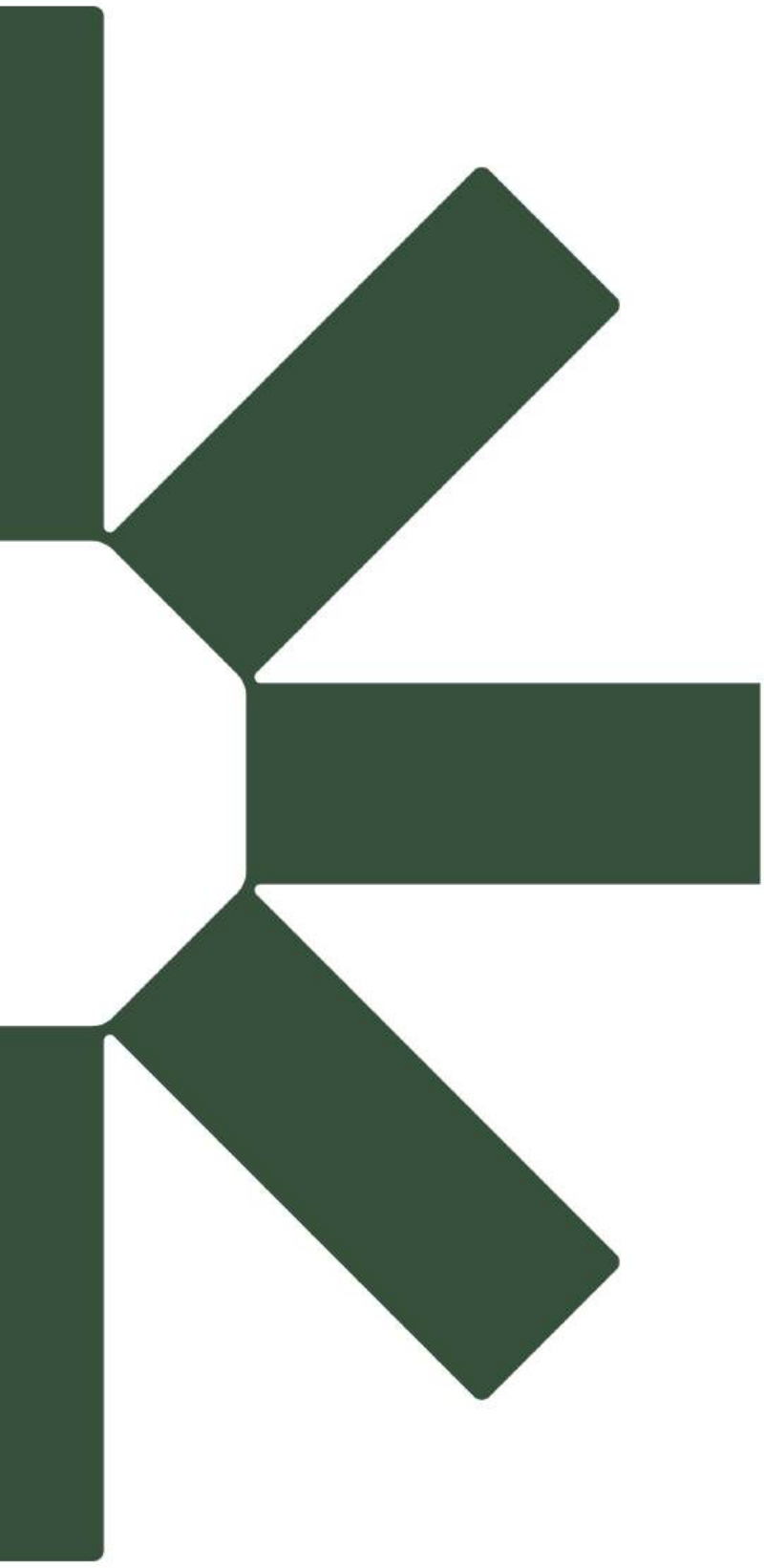
5.0 Environmental and Social Management and Monitoring

The Project Company, the Caspian Sea Azerbaijan Project Company LLC. will be responsible for the overall governance, strategic management, and regulatory compliance of the Project. The Project Company will establish and maintain an Environmental and Social Management System (ESMS) to ensure that the plant development and operations comply with applicable national legislation and the E&S requirements of project lenders. The ESMS will define organisational responsibilities, management procedures, monitoring mechanisms, and reporting processes for E&S performance across all Project activities, including those undertaken by contractors and service providers.

Volume 3 of the ESIA provides a framework to outline structures to be established for the management of E&S risks, impacts, opportunities and compliance associated with both the construction, commissioning and operational phases of the Project. This also outlines which parties shall develop elements of the respective management systems.

In order to implement the mitigation and management measures established in the ESIA (Volume 2), specific management programmes will be developed by the EPC Contractor and Operator respectively (as part of the respective construction and operational phase ESMSs) to incorporate these mechanisms, as well as the requirements of the local regulator, the Ministry of Ecology and Natural Resources (MENR) of the Republic of Azerbaijan and the Project Lenders. Such documented information will be in the form of Project-specific Construction Environmental and Social Management Plan (CESMP) and Operation Environmental and Social Management Plan (OESMP) (and complimentary plans/procedures); which are being prepared separately to the ESIA.

The Project will be subject to periodic independent monitoring in accordance with the requirements of the lenders. An Independent E&S Consultant (IESC) acting on behalf of the lenders will audit the Project. The purpose will be to verify the compliance of the Project against the requirements of the Lender Environmental and Social Action Plan (ESAP) and their standards and guidelines.



Making Sustainability Happen