
CEYHAN PROPANE DEHYDROGENATION - POLYPROPYLENE PRODUCTION PROJECT

NON-TECHNICAL SUMMARY

APRIL 2023

ANKARA

CEYHAN PROPANE DEHYDROGENATION - POLYPROPYLENE PRODUCTION PROJECT

NON-TECHNICAL SUMMARY

Version	Revision	Date	Prepared By	Quality Management By	Checked By	Approved By
Draft	A.0	October 2022	D. Emre Kaya (2U1K)	Esra Okumuşoglu (2U1K)	Günel Ozenirler (2U1K) Simon Taylor (RINA) Ilya Gulakov (RINA)	Ilya Gulakov (RINA)
Draft	A.1	November 2022	D. Emre Kaya (2U1K)	Esra Okumuşoglu (2U1K)	Günel Ozenirler (2U1K) Simon Taylor (RINA) Ilya Gulakov (RINA)	Ilya Gulakov (RINA)
Final	C.0	April 2023	D. Emre Kaya (2U1K)	Esra Okumuşoglu (2U1K)	Günel Ozenirler (2U1K) Simon Taylor (RINA) Ilya Gulakov (RINA)	Ilya Gulakov (RINA)

REVISION CODES: A: DRAFT, B: FINAL DRAFT, C: FINAL

PROJECT NO: 21/003

APRIL 2023

CLIENT:

Ceyhan Polipropilen Üretim A.Ş
Portakal Çiçeği Sokak No:33 Yukari Ayrancı
Çankaya - Ankara / Türkiye
☎: +90 (312) 840 10 00
☎: +90 (312) 442 58 16

TABLE OF CONTENTS

	Page
TABLE OF CONTENTS	1
LIST OF TABLES	2
LIST OF FIGURES	2
ABBREVIATIONS AND ACRONYMS	3
1 INTRODUCTION	4
1.1 Project Background	4
1.2 ESIA Process	4
1.2.1 National EIA Process	4
1.2.2 International ESIA Requirements	4
1.3 Structure of the ESIA Report.....	6
2 PROJECT DESCRIPTION	7
2.1 Need for the Project	7
2.2 Project Location	8
2.3 Project and Associated Facilities	9
2.3.1 Project Components	10
2.3.2 Terminal Facility.....	11
2.4 Project Layout.....	11
2.5 Execution Schedule	13
2.6 Workforce	13
3 STAKEHOLDER ENGAGEMENT & GRIEVANCE MECHANISM	14
3.1 Stakeholder Identification.....	14
3.2 Completed Stakeholder Engagement	15
3.2.1 Preliminary Stakeholder Engagement Activities	15
3.2.2 Follow-up Stakeholder Engagement Activities	17
3.3 Planned Stakeholder Engagement Activities.....	17
3.4 Public Grievance Mechanism.....	19
4 ESIA METHODOLOGY	21
4.1 Introduction.....	21
4.2 Baseline Data Collection	21
4.3 Assessment of Impacts	21
4.4 Development of Mitigation and Enhancement Measures	24
4.5 Assumption & Technical Difficulties	25
5 SUMMARY OF BASELINE, IMPACTS AND MITIGATION MEASURES	26
5.1 Baseline Information	26
5.2 Impact Assessment and Mitigation Measures	29
5.3 Environmental Hazards.....	49
6 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS	50

7 CONCLUSIONS	53
----------------------------	-----------

LIST OF TABLES

	<u>Page</u>
Table 2-1. Tentative Project Schedule.....	13
Table 3-1. Details of the Preliminary Stakeholder Engagement Activities Undertaken to Date 15	
Table 3-2. Consultations to be held	19
Table 3-3. Contact details.....	19
Table 4-1. Receptor Sensitivity	23
Table 4-2. Description of the Impact Significance	24
Table 4-3. Hierarchy of Options for Mitigation.....	25
Table 5.1. Summary of Baseline Information	26
Table 5.2. Geology, Soils, Sediments and Contaminated Land	29
Table 5.3. Hydrology and Hydrogeology.....	30
Table 5.4. Air Quality	30
Table 5.5. Traffic	32
Table 5.6. Terrestrial and Marine Ecology	34
Table 5.7. Social (Socio-Economics, Community Health and Safety, Labour and Working Conditions).....	40
Table 5.8. Visual.....	46
Table 5.8. Cumulative Impact Assessment.....	47
Table 6.1. Project Environmental and Social Management System	51

LIST OF FIGURES

Figure 2.1. Project Location.....	8
Figure 2.2. The Project Site and Surrounding Area.....	9
Figure 2-3. Project Area and Associated Terminal Facility.....	10
Figure 2.4. Project Layout.....	12
Figure 2.5. Layout of the Associated Terminal Facility	12
Figure 4.1. ESIA Process	21

ABBREVIATIONS AND ACRONYMS

AoI	Area of Influence
BAP	Biodiversity Action Plan
BAT	Best Available Technologies
BMP	Biodiversity Management Plan
Ceyhan PDH-PP Project / Project	Ceyhan Propane Dehydrogenation - Polypropylene Production Facility
Ceyhan Petrokimya A.Ş. or Management Company	Ceyhan Petrokimya Endüstri Bölgesi Yönetim A.Ş.
Ceyhan PP A.Ş. or Project Company	Ceyhan Polipropilen Üretim A.Ş.
CESCE	The Spanish Export Credit Agency
CPIR	Ceyhan Petrochemical Industrial Region
CPIR Port	Raw Material Supply, Storage and Port Facility Project
DFC	U.S. International Development Finance Corporation
EBRD	European Bank for Reconstruction and Development
EHS	Environmental, Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
EU	European Union
FIs	Financial Institutions
IFC	International Finance Corporation
LP	Low Pressure
LPG	Liquefied Petroleum Gas
MOEUCC	Ministry of Environment, Urbanization and Climate Change
MoIT	Ministry of Industry and Technology
PDH	Propane De-Hydrogenation
PP	Polypropylene
PR	Performance Requirements
PS	Performance Standards
RHDHV-TR	HaskoningDHV TR Engineering Inc.
SEP	Stakeholder Engagement Plan
SPV	Special Purpose Vehicle
Terminal Facility	Jetty and Propane Storage Facility
UKEF	UK Export Finance
VECs	Valued Environmental and Social Components

1 INTRODUCTION

1.1 Project Background

An Environmental and Social Impact Assessment (ESIA) study is conducted for the Ceyhan Propane Dehydrogenation (PDH) - Polypropylene Production (PP) Facility (“Ceyhan PDH-PP Project” or “the Project”), located in Ceyhan district of Adana province in the south of Turkey.

The investment decision on the Project was made by a partnership formed by Ronesans Ceyhan Petrokimya Endüstriyel Yatırım A.Ş. (51%), Ceyhan Petrokimya Endüstri ve Ticaret A.Ş. (15%) and Sonatrach Petroleum Investment Corporation BV (34%). These companies established a Special Purpose Vehicle (SPV) named Ceyhan Polipropilen Üretim A.Ş. (Ceyhan PP A.Ş. or Project Company) responsible construction and operation of the Project.

Project Company contracted RINA Tech UK Limited (RINA) and its local partner 2U1K MÜHENDİSLİK VE DANIŞMANLIK A.Ş. (2U1K) to act as international Environmental and Social (E&S) Consultant for development of the ESIA materials for the Project.

1.2 ESIA Process

1.2.1 National EIA Process

National Environmental Impact Assessment (EIA) study was carried out for the Project and the EIA Positive Decision was made on December 18th, 2020 with a decision number 6130. Ministry of Environment, Urbanization and Climate Change (MoEUCC) is the key governmental institution for implementation of the Project in terms of environmental permits.

Turkish Environmental Law (No. 2872), which was first published in the Official Gazette No. 18132 dated August 11, 1983, defines the main provisions for protection of the environment in line with sustainable environment and development principles, in addition to relevant institutional responsibilities. It also outlines the legislative framework for regulation of industries and their liabilities regarding the assessment and management of potential impacts on environment due to their activities. Other relevant legislative requirements are discussed in the ESIA document.

1.2.2 International ESIA Requirements

Ceyhan PP A.Ş. is seeking finance from international commercial banks with involvement of Export Credit Agencies (“ECAs”) providing insurance and DFC (U.S. International Development Finance Corporation) together “FIs”. One of the requirements of these FIs for granting loans and providing insurance is ESIA and due diligence to be compliant with international environmental standards.

This ESIA is conducted in line with:

- International Finance Corporation (IFC) Performance Standards (PSs) on Environmental and Social Sustainability;
- IFC Environmental, Health and Safety (EHS) General Guidelines;
- IFC EHS Guidelines for Large Volume Petroleum-based Organic Chemicals Manufacturing;
- IFC EHS Guidelines for Petroleum-based Polymers Manufacturing and other relevant international guidelines (i.e. WHO Guidelines);
- EBRD's Performance Requirements (PRs);
- Equator Principles IV;
- The recommendation on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence (The "Common Approaches").

The ESIA has been conducted to identify environmental and social impacts throughout the Project's lifecycle. The purpose of the ESIA study is to describe the Project, identify environmental and social impacts that will or may occur as a result of the Project and determine appropriate mitigation measures that can be taken to avoid and/or minimize the adverse impacts and maximize benefits.

As part of the ESIA Study, the Project Company performed additional studies to support the environmental sustainability perspective of the Project. These include:

- **Life Cycle Assessment (LCA):** it is a methodology for identification and evaluation of the environmental impacts of a product, which analyzes the actual and potential environmental aspects throughout the product life-cycle covering impact categories such as raw materials' consumption, energy consumption, waste generation, emissions to air, impacts on water and soil. It is aimed at identifying which phases of the life cycle are responsible for the most relevant environmental impacts and at identifying actions to improve the overall sustainability of the process/product;
- **Climate Change Risk Assessment (CCRA):** it is a study aimed at comprehensively evaluating the impacts that climate change has on the Project; it includes an analysis of baseline climate conditions at the Project location and of expected changes under different scenarios, with the ultimate aim of identifying physical risks affecting the plant and of defining potential adaptation measures; moreover, for certain categories of projects, transition risks are also evaluated, which are those arising as a consequence of the transition to a low-carbon economy; a quantification of GHG emissions related to the Project is also included in the CCRA.

This ESIA study also includes the development of an Environmental and Social Management Plan (ESMP) that determines how significant impacts will be mitigated, managed and monitored during construction, operation and decommissioning phases of the Project.

1.3 Structure of the ESIA Report

The ESIA is comprised of three parts, including:

- Non-Technical Summary (NTS) – this report;
- ESIA document and annexes;
- Stakeholder Engagement Plan (SEP).

2 PROJECT DESCRIPTION

2.1 Need for the Project

In spite of rapidly rising domestic demand for polypropylene in Turkey, domestic production of polypropylene remains extremely low because of very limited investment. This, on the one hand, negatively affects the competitiveness of the sector against its competitors both within the country and around the world, while on the other hand, causes the added value of the petrochemistry sector, which is very high, to remain abroad¹. Polypropylene production in Turkey between the years of 2013 and 2017 decreased by 8.4% on average per year. As such, the highest imports were made in polyethylene and polypropylene in terms of quantity and value in 2020. Imports from both of these raw materials accounted for 56% quantity and 53% value among the total plastic raw material imports². Since Turkey's overall demand exceeds the capacity of its existing petrochemical production, import products account for the majority of the country's petrochemicals supply. The Project will be implemented to reduce the dependence of import.

The Project will produce polypropylene (472,500 t/y of homo-polymer), which is the second largest portion of the national demand for raw plastics, thus allowing to cover almost 15% of Turkey's polypropylene demand.

Different design alternatives were evaluated for the Project. Alternative evaluation was performed by taking into account environmental and social considerations in addition to technical aspects. Consideration of alternatives during the Project design phase included the following:

- “No Project Alternative” or “Do Nothing” was considered not preferential due to the high polypropylene demand in Turkey;
- Alternative site location (the site chosen and considered as part of the ESIA process) within the CPIR Zone was found more suitable by considering ecological and geotechnical issues. Locating the Project units as close to the Raw Material Supply, Storage and Port Facility Project (CPIR Port) components as possible was another important criteria for site alternative selection;
- The layout of the Project has been changed so that the cultural heritage area stays outside the Project Area, since cultural assets are taken into account during the Project design. In addition, minimizing the land use was one of the considerations during the change of the Project layout;
- Oleflex technology, which is the most energy efficient technology and has the lowest level of Greenhouse Gas (GHG) emission, was chosen for the Project. In addition, hydrogen that will be produced during the process will be used as fuel for the facility;

¹ Türk Plastik Sanayicileri Araştırma Geliştirme ve Eğitim Vakfı, Turkish Plastic Industry Monitoring Report, 2020.

Non-Technical Summary

- Protection of the nearby communities from potential adverse impacts of the flare and other components of the Project such as propane tank and pipelines;
- In accordance with the strategy of Lenders and the mission of the Project Company, energy needs will be met using renewable energy sources to the extent possible, and the carbon emission level will be kept at minimum levels throughout the Project.

2.2 Project Location

The Project site is located near the Turkish Petroleum Pipeline Company (BOTAS) Ceyhan Oil Terminal to the southwest and BOTAS Port Authority to the west; Toros Agri Industry (a fertilizer production facility) and Adana Ceyhan Yumurtalik Free Trade Zone (including a cement plant) are located to the east. Isken Sugozu Energy Plant (coal terminal and a coal packaging plant) is also located approximately 9 km to the west of the Project site. There are also planned organized industrial zones (OIZ) in the vicinity of the Project site i.e., Ceyhan OIZ and Erzin OIZ.

The land use pattern to the north and northwest of the Project site includes agricultural lands and residential areas. The closest settlements are Kurtpinari Neighbourhood to the southwest and northwest and Sarimazi Neighbourhood to the northeast of the Project site boundaries. Location of the Project site and surrounding area is presented in Figure 2.1 and Figure 2.2.

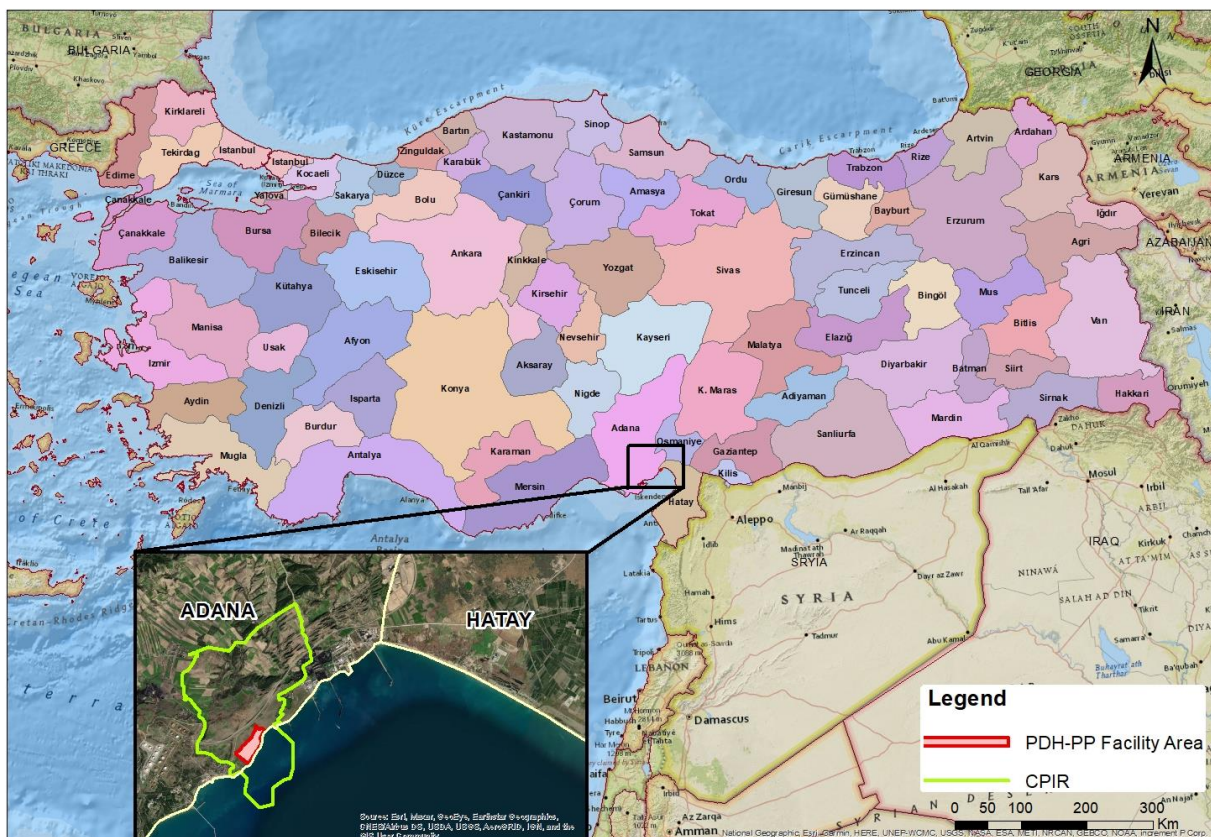


Figure 2.1. Project Location

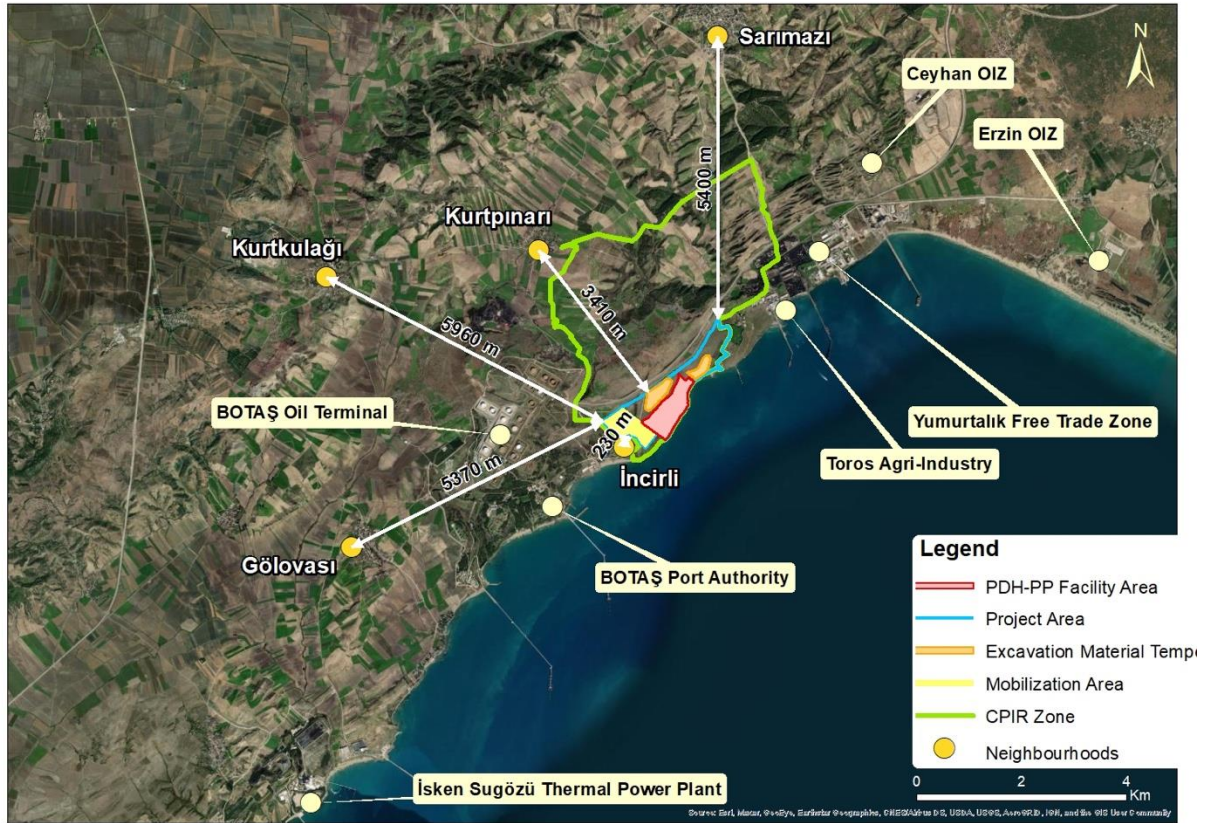


Figure 2.2. The Project Site and Surrounding Area

2.3 Project and Associated Facilities

In line with provisions of the IFC PS 1, the ESIA is performed in the context of the Project Area of Influence. In particular, the impact assessment is conducted considering impacts of the Project associated facilities and cumulative impacts. Thus, the Terminal Facility (including Jetty, Propane Storage Facility and relevant facilities and activities²) is considered as Associated Facility for the Project.

The Project Area and associated Terminal Facility are shown on Figure 2.3 below. Evaluation of different facilities against the associated facility criteria within the scope of the IFC PS1 is provided as part of the ESIA document.

² The Associated Facilities and activities include the Jetty and Propane Storage Facility, facilities for accommodation of construction workforce (for the Terminal Facility), transportation of construction materials and other traffic activities (for the Terminal Facility) and access roads for the Terminal Facility.

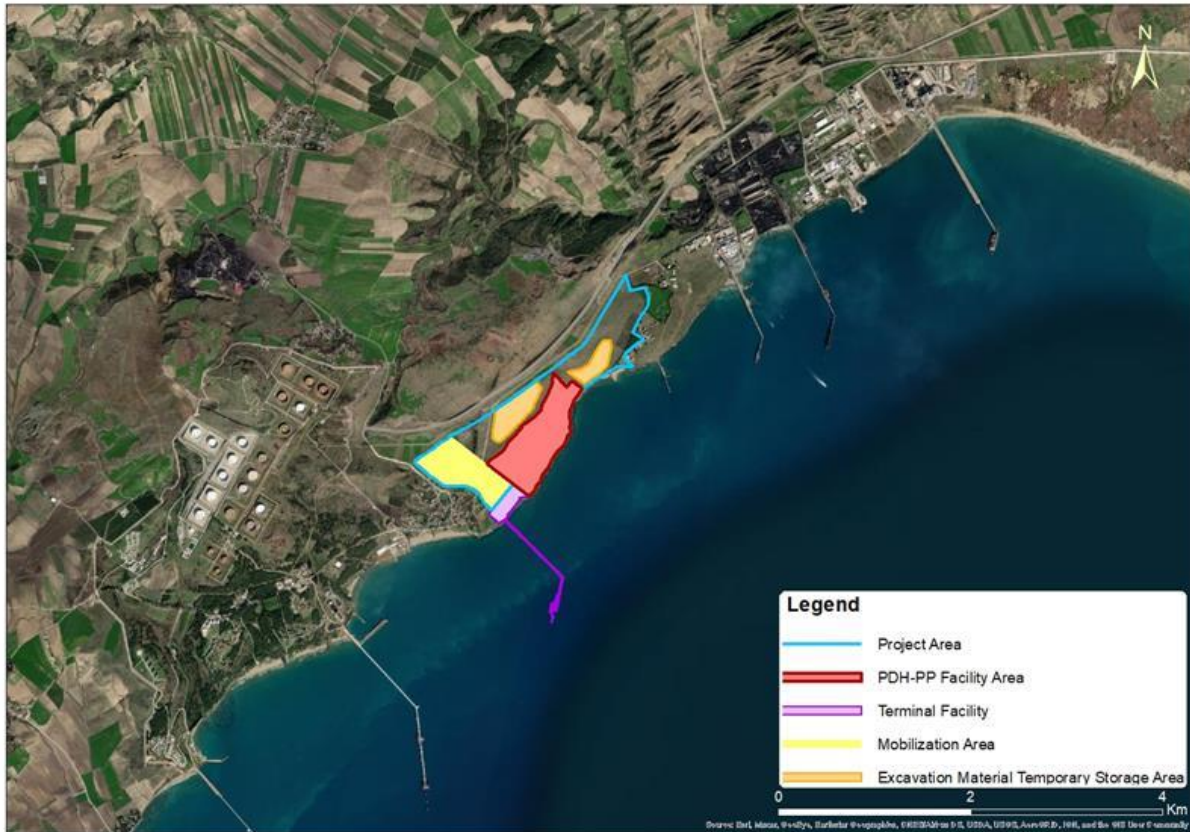


Figure 2-3. Project Area and Associated Terminal Facility

2.3.1 Project Components

The Project includes development, construction and operation of the structures and infrastructure described below. It will consist of the Propane De-Hydrogenation Unit (PDH), which utilizes propane as feedstock for conversion it into propylene through De-Hydrogenation route. The generated propylene from the PDH unit will be used in a Polypropylene (PP) unit to produce the end product. The Project will include:

- PDH Plant and PP Plant;
- Utilities:
 - Raw Water Unit;
 - Cooling Water Unit;
 - Drinking and Service Water Unit;
 - Instrument and Plant Air Supply Unit;
 - Nitrogen Generation Unit;
 - Fuel Gas Supply System;
 - Wastewater Collection, Treatment System and marine discharge line for treated wastewater;
 - NVIRO System;
 - Propylene Storage Unit;
 - Flare System;
 - Polypropylene Storage;

Non-Technical Summary

- Steam, Condensate, Boiler Feed Water and demineralized Water Production;
- Drainage System;
- Ancillary Buildings (administration, laboratory, fire station, control building etc.).

2.3.2 Terminal Facility

Propane, which will be used as raw material in PDH-PP process, will be brought to the Project by marine transport through a Terminal Facility comprising propane storage tank and a Jetty. In this respect:

- Terminal Facility will work solely for the Project;
- Operation of the Terminal Facility is fully integrated into the Project;
- Common services such as water supply, wastewater treatment, power supply, natural gas supply, emergency response etc. will also be integrated with the Project.

Associated Terminal Facility composes propane storage tank and a jetty, which includes unloading platforms and pipe rack. There will be a low pressure (LP) flare positioned adjacent to the propane tank. The Jetty will have a total length of 1.2 km and will be composed of the following units:

- Two Propane Unloading Arms;
- Propane Metering Station;
- Marine Operating Building;
- Piperack and Access Road, Trestle and Gangway Tower;
- One Propane Tank (double wall full containment tank with outer concrete wall inner metal wall and top entry for pump out);
- Propane in Tank Pumps and Motor;
- Propane Heater;
- Propane BOG Package;
- Tank LP Flare System and Knock Out Drum;
- Interconnecting pipeline from Propane Tank Farm to Jetty Unloading Area;
- Firefighting Equipment;
- Drainage System;
- Fuel Gas System;
- Instrument Air System;
- Cryogenic Liquid Nitrogen Package;
- Jetty Drain Drum/Heater.

2.4 Project Layout

The main Project units and layout of the plant and Associated Terminal Facility (including specification of units and facilities) are presented in the Figures below.

Non-Technical Summary

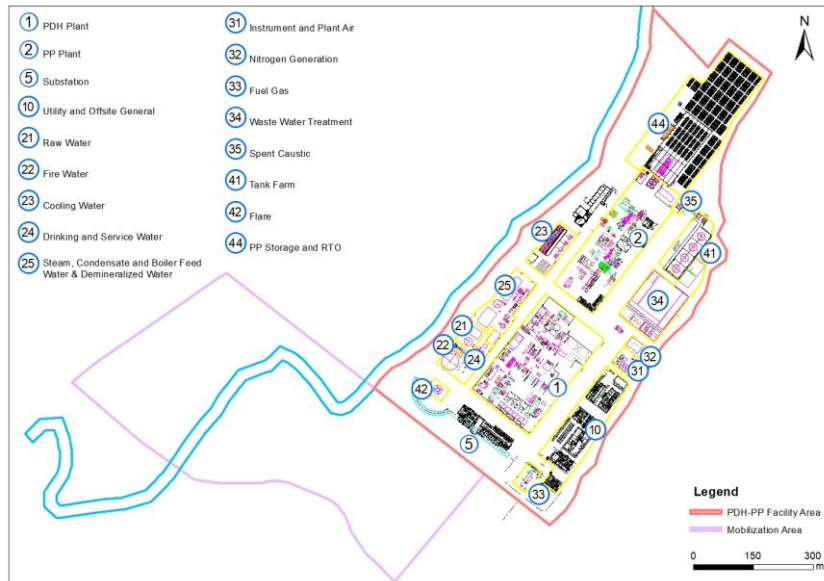


Figure 2.4. Project Layout

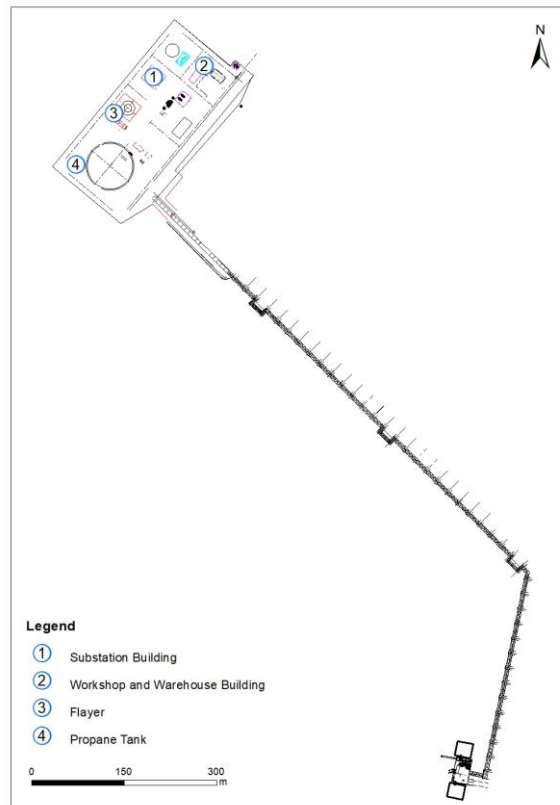


Figure 2.5. Layout of the Associated Terminal Facility

Raw Materials Supply and Transportation

The following raw materials will be used for the Project:

- Propane, the main raw material used for Polypropylene production, will be supplied from international markets and transferred to the Project Site via marine tankers;

Non-Technical Summary

- Water, natural gas and electricity will be supplied by the CPIR Management Company via internal infrastructure of the CPIR Zone;
- Other materials such as catalysts and chemicals will be supplied from both international and national markets by land transportation.

2.5 Execution Schedule

Construction schedule of the Project is provided in Table 2-1. The Phase-1 Early Site Works period of the Project will last 6 months. The Main Engineering Procurement and Construction (EPC) Works period of the Project will last for 38 months (including engineering, procurement and commissioning activities), whereas the Project Company will be responsible for the operation of the Project for the subsequent 49 years. The following key activities are planned as part of the Project:

Table 2-1. Tentative Project Schedule

Phase	Works	Duration
Early Works	1.Detail Engineering (Process, and Procurement Engineering)	May 2021 - October 2022
	2.Site Preparation works	July 2022 - October 2022
Main EPC Works	3.Detail Engineering (Process, HSE, Civil, Structure, Architecture, Mechanical, Piping, Electrical, Instrument Engineering)	March 2023 - October 2024
	4.Procurement (Mechanical, Piping, Electrical, Instrument, Structural Steel, Fire-fighting, HVAC)	April 2023 - February 2025
	4. Construction and Pre-commissioning Works	March 2023 - December 2025
	5. Terminal Facility	March 2023 - April 2026
	6. Commissioning of Terminal Facility	February 2026 - April 2026
Operation	Operation	Following 49 years

2.6 Workforce

The Project workforce for the construction phase is estimated as 4,500 workers during the peak of construction period. The workforce during the operation phase is planned to be 321 persons in total.

3 STAKEHOLDER ENGAGEMENT & GRIEVANCE MECHANISM

Stakeholder engagement is an integral and crucial part of the ESIA process aimed at providing an opportunity for affected communities and other stakeholders to express their views and concerns about the Project, and to take them into account during the assessment of impacts and identification of mitigation measures. The Stakeholder Engagement Plan (SEP) has been developed to manage this process for the Project.

3.1 Stakeholder Identification

Stakeholders are persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence project's outcome. Stakeholders may include locally affected communities or individuals and their formal and informal representatives, national or local government authorities, politicians, religious leaders, civil society organizations and groups with special interests, the academic community, or other businesses.

The Project stakeholders are divided into 3 key groups: affected parties, interested parties and vulnerable groups:

Affected parties

Affected parties include stakeholders that might be directly or indirectly affected by the Project. These include:

- Local communities (Kurtpinari, Kurtkulagi, Sarimazi, Golovasi);
- Local businesses (Cengiz Restaurant and Esentepe Kilyos Fish Restaurant);
- Fishermen in Incirli and Golovasi;
- Schools (Toros Tarim Primary School and BOTAS Primary School and Kindergarten);
- Workers, including:
 - Project workers;
 - Supply chain and third party workers;
 - Associated Facility's workers;
- Households and organizations potentially affected by economic displacement;
- Households affected by physical displacement.

Interested parties

Interested parties include individuals, groups or institutions that will not be directly affected by the project but whose interests might be affected. This category includes:

- Government bodies;
- CPIR Management Company;
- Other businesses in the area (apart from the affected restaurants named above);

Non-Technical Summary

- NGO's;
- Universities.

Vulnerable groups

Vulnerable groups are people who might be directly and differentially or disproportionately affected by a project because of their disadvantaged or vulnerable status. This disadvantaged or vulnerable status may stem from an individual's or group's race, color, sex, language, religion, political or other opinion, national or social origin, property, birth, or other status.

The vulnerable groups and other Project stakeholders are described in more detailed in the ESIA document and the SEP.

3.2 Completed Stakeholder Engagement**3.2.1 Preliminary Stakeholder Engagement Activities**

The preliminary stakeholder engagement activities included communications with the Project stakeholders using Project Information Document and leaflets, Public Consultation Meeting and preliminary face-to-face meetings for discussions with the stakeholders to gain preliminary understanding in the progress of the scoping stage. Details are given of in Table 3-1 below.

Table 3-1. Details of the Preliminary Stakeholder Engagement Activities Undertaken to Date³

Stakeholder Type	Engagement Method
Governmental Bodies (a total number of 78 – see the SEP)	Project Information Document together with a cover letter, with a request to comment on the Project, its potential impacts and to provide information that may be important for the ESIA study. The letters were sent as certified mail with return receipt requested to ensure that all the letters were delivered.
NGOs (a total number of 63 – see the SEP)	Project Information Document together with a cover letter with a request to comment on the Project, its potential impacts and to provide information that may be important for the ESIA study. The letters were sent as certified mail with return receipt requested to ensure that all the letters were delivered.
Universities (a total number of 2, details of the list of universities can be found in SEP)	Project Information Document together with a cover letter with a request to comment on the Project, its potential impacts and to provide information that may be important for the ESIA study. The letters were sent as certified mail with return receipt requested to ensure that all the letters were delivered.
Headmen of 24 neighbourhoods (including surrounding neighbourhoods and neighbourhoods at a wider distance within approximately 15 km)	A Project information package (including 5 Project Information Documents, 25 Project Information Leaflets and 25 Comment/Complaint Forms) were sent with a cover letter to headmen of 24 neighbourhoods to provide information on the planned Project and related impacts, ongoing environmental and social impact assessment and to provide opportunity to express views and concerns about the Project, and to inform how views/concerns can be submitted. The letters were sent as certified mail with return receipt requested to ensure that all the letters were delivered. Prior to sending the information, the headmen were contacted by phone to inform them about the aim of the Project information package and they were requested to distribute the leaflets in their neighbourhoods.

³ The letter dated 15.05.2020 sent by the General Directorate of Environmental Impact Assessment, Permit and Inspection of the Ministry of Environment and Urbanisation stated that the Public Participation Meeting will not be held regarding the Terminal Facility, and that the national EIA submitted should be disclosed. Based on this letter, no public participation meeting has been organised for the Terminal Facility planned to be built by Ceyhan Petrokimya Endüstri Bölgesi Yönetim A.Ş. Following the approval of the EIA Report, it was disclosed on the MoEUCC website (<http://eced.csb.gov.tr/jsp/ek1/29631>).

Non-Technical Summary

Stakeholder Type	Engagement Method
Project EIA Public Consultation Meeting (PCM)	A meeting was held on 21.01.2020 in Sarimazi's Old Municipality building in order to inform about the EIA report of the project and to get the opinions of the public. A total of 44 people attended the meeting. Details of the meeting are included in the Project's EIA report.
Public Consultation Meeting	<p>A PCM was held on 6th March 2020 in Kurtkulagi Neighbourhood in Ceyhan District. The meeting location was selected based on its proximity to the Project site as well as its suitability to accommodate the potential attendees. A total of 58 people attended the PCM, including 35 people from Kurtkulagi, 8 people from Kurtpinari, 7 people from Sarimazi, 2 people from Golovasi, 2 people from Ulus, 1 person from Sagirlar, 1 person from Narlik, 1 person from Hurriyet as well as 1 delegate of Development of Tourism in Yumurtalik and Protection of Environment Association.</p> <p>The meeting was announced via advertisements in one national (25.02.2020) and one local (27.02.2020) newspaper in advance of the PCM and the advertisement was repeated at the same newspapers a week later on 2nd March 2020.</p> <p>The meeting was also announced at mosques to local people. Ceyhan Polypropylene A.Ş. (Project Company) representatives and developers of initial ESIA document were present during the PCM. The meeting started with a brief on the Project, including fields of use of polypropylene, given by the Project Company representatives. This was followed by presentation summarizing the main features of the Project and ESIA and stakeholder engagement process and activities that had been and were to be undertaken. Photographs from the public consultation meeting and meeting notes are presented in the SEP.</p>
Stakeholder Engagement Meeting about Early Works	A stakeholder participation meeting was held in Kurtpinari Neighbourhood on 06.07.2022 to provide information about the early works. The meeting location is selected based on its proximity to the Project area, as well as its suitability to accommodate the potential attendees. A total of 21 people attended the meeting.

In addition, the following stakeholder engagement activities were conducted:

- A social survey was conducted comprising face-to-face meetings with governmental authorities, headmen, Toros Agri Primary School, nearby facilities and focus groups, which were selected based on the interest and relevance for the Ceyhan PDH-PP Project, as well as proximity to the Project site on 10-12th February 2020;
- Face-to-face meetings were performed at three (3) neighbourhoods, Kurtpinari, Kurtkulagi and Sarimazi. Kurtpinari headman was also representing Incirli and Karatepe settlements, which are belong to Kurtpinari neighbourhoods;
- Focus group discussions (FGDs) were organized in Kurtpinari and Kurtkulagi neighbourhoods with the participation of the headmen, as well as residents (20 residents from Kurtkulagi Neighbourhood and 4 residents from Kurtpinari Neighbourhood). Women have also raised their concerns and recommendations during the FGDs. They chose to attend to the FGDs together with the men at the preliminary discussion and therefore no separate session was organized for women. More information on women's participation is provided in the SEP;
- A meeting was held with Golovasi Neighbourhood Headman, who is also responsible for the S.S.S. Golovasi Neighbourhood Aquaculture Cooperative on 6th March 2020 after the PCM meeting.

The key issues that were raised during the face-to-face meetings relate to zoning plan of the region, waste management, job opportunities, terrestrial and marine traffic, etc. More detail on the issues discussed is provided in the SEP.

3.2.2 Follow-up Stakeholder Engagement Activities

Following the preliminary stakeholder engagement activities at the early stage of the ESIA process, further social assessment studies and stakeholder engagement activities were conducted to fulfil the gaps and improve the initial ESIA in line with the revisions in the Project design in progress so as to finalise the ESIA in line with the IFI's requirements. The study was conducted on July 5-10, 2021 for verification of existing data or collecting new information where existing data were insufficient. Below are the people and groups interviewed within the scope of the study:

- 4 in-depth interviews with NGOs;
- 2 focus group discussions with women residing within the Social Area of Influence;
- In-depth interviews with residents of the affected communities (Kurtpinari, Kurtkulagi, Sarimazi and Golovasi);
- Community level surveys with Mukhtars (local government heads of villages) within the Social Influence Area.

In addition, meetings with people affected by physical and economic displacement, business owners and Mukhtars were conducted in July 2022 as part of Land Acquisition Gap Analysis. The gap analysis was conducted in order to:

- Clarify status of the Project land acquisition process;
- Identify gaps of land acquisition process against provisions of national legislation and international standards;
- Inform development and implementation of corrective measures to ensure compliance of the Project land acquisition process with national and international requirements.

More detail on the named above consultations are provided as part of the SEP and Land Acquisition Gap Analysis Report.

3.3 Planned Stakeholder Engagement Activities

Stakeholder engagement activities will continue during the construction period which will then be followed by engagement activities during the Project operation. Consultation activities during construction and operation phases are important in order to maintain constructive relationships both with the local communities and other stakeholders. There will be a Community Liaison Officer (CLO) during construction and operation phases who will be the main contact person to handle comments and grievances. Project Company will be responsible

Non-Technical Summary

for updating the SEP on a regular basis during construction and operation phases. Although not precisely determined yet, planned engagement activities are briefly outlined below.

Planned stakeholder engagement activities will include the disclosure of the ESIA package. The following Project documents will be disclosed in English and Turkish languages on the Project website (www.ceyhanpp.com) and in the affected communities:

- **ESIA Report** – consisting of main text and supplementary annexes including the ESMP;
- **Non-Technical Summary (NTS)** of the ESIA Report;
- **Stakeholder Engagement Plan (SEP).**

The documents will be made available to the public for review and commenting for 60 days. The objective of the disclosure period is to inform stakeholders about the Project activities, impacts, proposed mitigation, monitoring and management measures. The Project Team and the ESIA team will, in consultation with the Lenders, review the comments received during the consultation process so that relevant mitigation measures can be taken to address the concerns raised by different stakeholders.

In addition to disclosure of the documents, the following activities will be conducted:

- Press announcement will be made at the beginning of the disclosure period announcing the publication of the Final Draft ESIA Report and other documents and the commencement of the consultation phase. The advertisements will also provide information on the date and time of community meetings. Targeted notification of certain stakeholders (for example, fishermen) will be also used. The press announcement will also provide a notification for vulnerable groups (see below);
- To inform vulnerable groups, the Project Company will seek opportunity to put posters informing on information disclosure and the meetings in local health care facilities, community centers and social protection bodies, i.e. facilities that might be visited by vulnerable groups.

The press announcement will also provide information that if special assistance is needed for accessing disclosed documents or participation in the meetings, a person might contact the Project Company which will seek for opportunities to meet relevant needs;

- Since during completed consultations women requested not to conduct separate meetings for women and men, common meetings for men and women will be conducted. However, separate consultations for women might be provided under request. Information on opportunity for conducting such consultations will be outlined in the press announcement;
- Posters will be placed in affected communities in 1-2 weeks prior to the meetings to inform residents of affected communities;

Non-Technical Summary

- Within the disclosure period, the following consultations will be held to explain the outcomes of the ESIA study and to address questions raised:

Table 3-2. Consultations to be held

Type of Meeting	Stakeholder	Date	Venue
Community meeting	Incirli and Karatepe	To be defined	To be defined (for example, premise of restaurant in Incirli or office premises in Mobilization Area)
Community meeting	Kurtpınarı	To be defined	Community centre in Kurtpınarı
Round table meeting	Golovasi and Incirli fishermen	To be defined	To be defined (for example, premises of fishing port)
NGO meetings	Meeting might be conducted upon stakeholders (NGOs') request	To be defined	To be defined accordingly

This table does not describe consultations with stakeholders affected by land acquisition and physical/economic displacement. These consultations will be described by the Livelihood Restoration Plan and/or Resettlement Action Plan to be prepared based on findings of the Land Acquisition Gap Analysis. Consultations with communities regarding emergency and response issues will be determined as part of the Emergency Preparedness and Response Plan (a standalone document) to be publicly disclosed.

Upon completion of the disclosure period, the ESIA Report will be finalized by reflecting comments received during the disclosure period as required. The Final ESIA Report will be published on the Project website.

After completion of the ESIA process, The Company will continue to engage with the stakeholders during construction and operation of the Project. Outline plans for this are set out in the SEP.

3.4 Public Grievance Mechanism

A grievance mechanism will be established to ensure that all comments, suggestions and objections from Project stakeholders, particularly from affected communities, are addressed appropriately and in a timely manner. The grievance mechanism allows provision of anonymous complaints. It is important to note that there will also be a separate grievance mechanism for workers/employees during construction and operation phases. Ceyhan PP A.Ş. will also be responsible for management of grievances related to services conducted by the Project (sub)contractors.

Comments, suggestions and grievances can be submitted via the following methods:

Table 3-3. Contact details

Contact Details
<ul style="list-style-type: none"> • CLO contact details:
<ul style="list-style-type: none"> • E-mail address: info.cpp@ronesans.com
<ul style="list-style-type: none"> • Phone Number: +90 312 497 3428

Non-Technical Summary

Contact Details
<ul style="list-style-type: none">Grievance box locations: grievance forms/boxes will be available at the site entrance, worker accommodation area, canteen & cafeteria, medical facilities etc.
<ul style="list-style-type: none">Project Company (Ceyhan Polipropilen Üretim A.Ş.) Website: http://www.ceyhanpp.com
<ul style="list-style-type: none">Project Company e-mail address: info.cpp@ronesans.com
<ul style="list-style-type: none">Dedicated Grievance Fax Number: +90 312 468 1336
<ul style="list-style-type: none">Postal Address: Aziziye mahallesi, Portakal Çiçeği sokak, No: 33 Yukarı Ayrancı, Çankaya/ANKARA

More detail on the grievance mechanism is provided in the SEP.

4 ESIA METHODOLOGY

4.1 Introduction

The key objectives of the ESIA are to assess the potential environmental and social impacts associated with the construction, operation and decommissioning of the Project, and to identify measures that can be adopted to avoid, minimise or offset adverse impacts and enhance beneficial impacts. Figure 4.1 below shows the flow chart of the standard ESIA process.

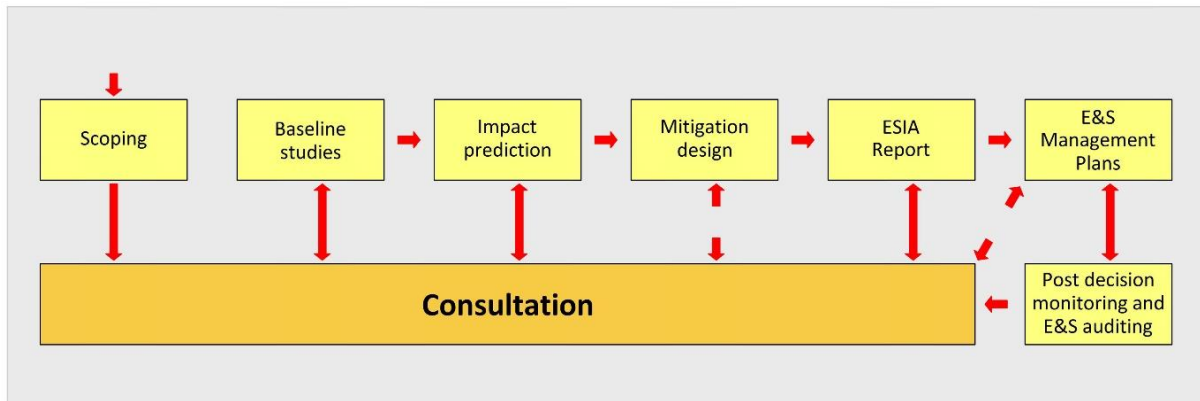


Figure 4.1. ESIA Process

4.2 Baseline Data Collection

Primary and secondary E&S baseline information was collected through:

- Technical reports prepared by the Project Company and its consultants, including EIA consultants;
- Secondary data sources (published materials and documents, maps by government agencies, research organizations and other relevant organizations);
- Review of aerial photographs of the Project site and its surroundings;
- Field study results.

Baseline data collection started during the scoping phase and continued to support the assessment process. Baseline studies and findings are described in the relevant chapters of the ESIA Report, with the summary being provided in the Section 5 of this document.

4.3 Assessment of Impacts

The impact assessment process predicts and describes impacts that are expected to occur for different phases of the Project. Where possible, impacts are quantified to the extent practicable, which may include size of land affected; increase in noise or air pollution levels above acceptable standards; volume of waste or water discharged; number of households affected, etc. For each impact, its significance is evaluated by defining and evaluating two key aspects:

Non-Technical Summary

- The magnitude of the impact; and
- The sensitivity of the feature or receptor that will be impacted.

Impact magnitude is a function of the following impact characteristics:

- I. Geographical Extent (G);
- II. Duration (D);
- III. Intensity (I);
- IV. Frequency or Likelihood (F or L);
- V. Reversibility (R).

$$\text{Impact Magnitude} = (G+D+I+F \text{ (or L)}) \times R$$

The magnitude can also be defined as the severity of the potential impact. It indicates whether such an impact is irreversible or reversible. If the adverse effect of a project can be mitigated, then the magnitude of the impact cannot be considered as very high.

Sensitivity/vulnerability/importance of the impacted resource/receptor to the type of activity proposed (e.g., habitat clearance, topsoil removal, etc.) or the impact of a Project activity (e.g., dust, noise, water pollution, or induced population influx). This requires a range of physical, biological, cultural or human factors to be taken into account and may also need to include other factors such as legal protection, government policy, stakeholder views and economic value.

As in the case of magnitude, the sensitivity/vulnerability/importance designations themselves are universally consistent, but the definitions for these designations will vary on a resource/receptor basis. The universal sensitivity/vulnerability/importance designations are:

- Low;
- Medium; and
- High.

Receptor sensitivity definitions considered for the impact assessment Process are given in Table 4-1.

The Impact significance is calculated by multiplying the Impact magnitude by the Sensitivity Score:

$$\text{Impact Significance} = \text{Impact magnitude} \times S$$

Description of the Impact Significance Provided in Table 4-2.

Table 4-1. Receptor Sensitivity

<p>Receptor Sensitivity (S)⁴ describes the ability of the receptor to withstand adverse impacts. It takes into consideration not only activity-impact-receptor pathways, but also social and environmental characteristics of the receptor that might make it more or less resilient to change.</p>	1	<p>Low: Local community and/or environment is fully equipped/has the tools to manage changes of life quality:</p> <ul style="list-style-type: none"> • Species and/or population has high capacity to absorb or adapt to change (i.e. has capacity to move away from or adapt to the project impact), and is potentially unaffected or marginally affected; • People being least vulnerable to change or disturbance (i.e. ambient conditions such as air quality are well below applicable legislation and international guidance); • Individuals who are able to quickly adapt to temporary disruption in their living conditions, livelihood status or a change in the status of public infrastructure.
	3	<p>Medium: Local community and/or environment is partially equipped/has the tools to manage changes of life quality. For example:</p> <ul style="list-style-type: none"> • Internationally threatened species /protected area within the area impacted by project activities outside of period of high sensitivity or during routine or reliably predictable peak presence; • Species and/or population which has moderate capacity to absorb or adapt to change (i.e. has capacity to move away from or adapt to the project impact), leading to potential temporary but sustainable effect which does not substantially alter character or result in significant loss of ecological functionality; • People being vulnerable to change or disturbance (i.e. ambient conditions such as air quality are below adopted standards); • Negative change in livelihood status, household assets/income or living conditions. Temporary disruption to businesses resulting in a small drop in business revenue; • Increased risk to public health that can be controlled using detailed mitigation measures; and • Disruption to public infrastructure that results in an inconvenience to other users.
	5	<p>High: Sensitive local community and/or environment not equipped or prepared to cope with social and environmental impacts such as changes of life quality. For example:</p> <ul style="list-style-type: none"> • Internationally threatened species / protected area within the area impacted by project activities during period of high sensitivity (e.g. during breeding, spawning or nesting) and during routine or reliably predictable peak presence; • Species and/or population which has little or no capacity to absorb or adapt to change (i.e. little or no capacity to move away from or adapt to the project impact), leading to potential for substantial change of character and/or loss of ecological functionality; • Most vulnerable groups (i.e. groups that will be more affected by ambient conditions such as air quality, dust, noise, traffic, etc.); • Individuals with a marginal livelihood, low socio-economic income or poor quality living conditions; • Individuals who are vulnerable due to their age, disability or other reason and who may require special assistance during engagement activities; and • Businesses with a marginal economic existence which are not able to easily adapt to change.

⁴ Receptors may be people, ecological and physical components of the environment. Receptor sensitivity considers how a particular receptor may be more or less susceptible to a given impact. More sensitive receptors may experience a greater degree of change, or have less ability to deal with the change, compared with less sensitive receptors that may be more resilient or adaptable.

Table 4-2. Description of the Impact Significance

Score of the Impacts		
Value	Score	Definition
4-25	Negligible	An impact of " Negligible " significance is one where a resource/receptor (including people) will essentially not be affected in any way by a particular activity or the predicted effect is deemed to be 'imperceptible' or is indistinguishable from natural background variations.
26 - 75	Low	An impact of " Low " significance is one where a resource/receptor will experience a noticeable effect, but the impact magnitude is sufficiently small (with or without mitigation) and/or the resource/receptor is of low sensitivity/vulnerability/ importance. In either case, the magnitude should be well within applicable standards.
76 - 150	Medium	An impact of " Medium " significance has an impact magnitude that is within applicable standards but falls somewhere in the range from a threshold below which the impact is minor, up to a level that might be just short of breaching a legal limit. Clearly, to design an activity so that its effects only just avoid breaking a law and/or cause a major impact is not best practice. The emphasis for moderate impacts is therefore on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that impacts of moderate significance have to be reduced to minor, but that moderate impacts are being managed effectively and efficiently.
151 - 250	High	An impact of " High " significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. An aim of impact assessment is to get to a position where the Project does not have any major residual impacts, certainly not ones that would endure into the long term or extend over a large area. However, for some aspects there may be major residual impacts after all practicable mitigation options have been exhausted (i.e. ALARP has been applied). An example might be the visual impact of a facility. It is then the function of regulators and stakeholders to weigh such negative factors against the positive ones, such as employment, in coming to a decision on the Project.
251 - 500	Very High	An impact of " Very High " significance after all feasible mitigation measures have been identified and assessed warrants the highest level of attention and concern. As with residual impacts of major significance, the regulators and stakeholders will need to closely evaluate whether the positive impacts of the project outweigh residual negative impacts of very high significance. In many cases residual critical impacts can be considered as a potential fatal flaw of the project.

Once mitigation measures are applied, the residual impact significance (i.e impact significance after the implementation of the mitigation measures) is evaluated, with the same methodology mentioned above.

4.4 Development of Mitigation and Enhancement Measures

One of the aims of an ESIA consists of determining mitigation measures in order to limit any potential negative impacts affecting all physical, biological and socioeconomic resources and receptors due to Project activities. Mitigation measures are defined against each significant adverse impact by making use of avoidance, minimization, restoration and remediation as appropriate. Mitigation measures provided in each impact assessment table are also grouped under each project phase such as design, pre-construction, post construction and operation. In general, mitigations suggested for operation phase are directly related to the Project design, in this respect these mitigations are also grouped under design phase.

A hierarchy of mitigation options is considered, with avoidance at the source of the impact as a priority and compensatory measures or offsets to reduce the impact significance as a last resort. The mitigation hierarchy that is utilised in identification of mitigation measures are presented in Table 4-3 below.

Table 4-3. Hierarchy of Options for Mitigation

Options	Explanation
Avoid at Source; Reduce at Source	Avoiding or reducing at source is designing the project so that a feature causing an impact is designed out (e.g., avoiding constraint areas during site selection) or altered (e.g., reduced waste volume).
Abate on Site	This involves adding something to the design to abate the impact (e.g., pollution controls).
Abate at Receptor	If an impact cannot be avoided, reduced or abated on-site then measures can be implemented off-site (e.g., noise screening at properties).
Repair or Remedy	Some impacts involve unavoidable damage to a resource. Repair essentially involves restoration and reinstatement type measures.

4.5 Assumption & Technical Difficulties

This ESIA is prepared based on the Project information received from the Project Company, and a description of the Project is given in *Chapter 2: Project Description including Alternatives* of the ESIA document according to this information. The description of the Project is based on the Front-End Engineering Design (FEED) documents made available to Haskoning DHV TR Engineering Inc. (RHDHV-TR). The detailed design of the Project was still ongoing during preparation of the ESIA document. However, all the units and other aforementioned facilities will be located within the identified Project site and have been considered during the impact assessment. Therefore, it is not expected that the present uncertainties will have a considerable effect on the identified impacts of the Project. However, in order to address the uncertainties, monitoring will be undertaken by the Project Company to understand whether the identified mitigation measures are sufficient or there is a need for refinement of any mitigation measure(s).

5 SUMMARY OF BASELINE, IMPACTS AND MITIGATION MEASURES

5.1 Baseline Information

A summary of the Project's baseline information is included in the table below.

Table 5.1. Summary of Baseline Information

Component	Description
Geology, Soil Sediments and Contaminated Land	<p>The Project site is greenfield land and a previous agricultural field with marginal agricultural land properties. The social survey at the local neighbourhoods in the vicinity of Project site indicates that most of the residents (i.e., Kurtkulagi, Kurtpinari, Sarimazi) are employed in agriculture sector (olive groves, pomegranate, and orange trees; wheat, bean, etc.) and also conduct daily livestock grazing and beekeeping activities.</p> <p>Soil samples were collected on 21 June 2020 at five different locations. According to the soil sampling results: Arsenic is noted to exceed the Generic Risk limit values in all collected soil samples. All the other organic and inorganic parameters are found to be below the RSPC (Regulation on Soil Pollution Control and Point-Source Contaminated Sites - O.G. Date/Number:08.06.2010/27605) generic limit values.</p>
Hydrology and Hydrogeology	<p>In order to identify the hydrographic features, a Hydrographic and Oceanographic Investigation Study has been performed. Within the study, bathymetric measurements, current measurements, conductivity, temperature, and depth (CTD) measurements, seismic profiling studies, side scan sonar studies, sediment sampling and analysis, and also data collection from literature have been performed.</p> <p>Seawater and sediment samples were collected and analysed.</p> <p>There is no sewerage system in the neighborhoods (Kurtpinari, Kurtkulagi, Sarimazi and Golovasi), wastewater in all neighborhoods is diverted from houses to septic tanks. Solid wastes are collected and disposed of by the municipality in all neighborhoods. Village roads and connection roads are high quality asphalt in all neighborhoods. While tap water and well water is used in Golovasi for drinking, natural spring water from Burnaz is used in the remaining neighborhoods.</p>
Material Resources and Waste Management	<p>Domestic waste generated in Adana is disposed of in the Integrated Solid Waste Disposal Facility. The facility, which has a Class II regular storage license, receives an average of 2000 tons/day of domestic solid waste from 15 central districts in Adana. The facility has a segregation unit consisting of 3 lines for mixed wastes. Wastes are segregated as organic and packaging wastes according to their type.</p> <p>The domestic wastewater generated in Adana province is treated in four WWTPs.</p>
Air Quality	<p>Passive sampling at 11 monitoring stations and settled dust measurement at 2 monitoring stations were conducted for ambient air quality at 13th November 2019 and 13th November 2020:</p> <ul style="list-style-type: none"> • Passive sampling: <ul style="list-style-type: none"> ○ NO_x at 11 locations for 2 months; ○ SO₂ at 11 locations for 2 months; ○ Volatile organic compounds (VOC) at 11 locations for 2 months; • Settled dust at 2 locations for 2 months; • PM₁₀ at 2 locations for 1 month; • PM_{2.5} at 2 locations for 1 month. <p>It is observed that the detected baseline values for PM deposition and PM₁₀ remain below the Turkish ambient air quality limits for industrial facilities.</p> <p>The average LTV (Long Term Value) SO₂ and NO₂ remain below the Turkish ambient air quality limits for the year 2024 at all locations.</p>

Non-Technical Summary

Component	Description
	<p>When the VOC baseline concentrations were assessed, the first sampling value of one of the measurement locations (P-10) was found to be above STV (Short Term Value) limit values; on the other hand, when the average of two samplings are evaluated, values at all measurement locations were found to be below the limit values.</p>
Noise and Vibration	<p>Two different baseline noise level monitoring exercises were conducted at 5 points to evaluate the background noise levels in 2020 and 2021. Background noise levels were observed as follows:</p> <ul style="list-style-type: none"> • Day-time noise levels at all measurement locations during the first and second day are below the national and international standards. Baseline noise levels at three representative receptor points / monitoring points are just slightly lower than the international limit values; • Night-time noise levels at all measurement locations during the first and second day are below the national standards. However, with respect to the international standards noise levels at 4 points exceed the international limit values for measurements during both of the days. Day-time noise levels are relatively higher than night-time noise levels. This difference is attributed mostly to the daily traffic noise in addition to activities by local residents.
Traffic	<p>Terrestrial Traffic: The Project Area is located to the south of the E90 Motorway (i.e., Adana-Sanlıurfa Road), which has 6 lanes and D-400 (Adana - Osmaniye Road) and to the southwest of the E91 Motorway (Ceyhan-Iskenderun Road) which has 4 lanes. There are two main junctions providing access to the Project Area, which are Ceyhan Junction to the northwest and Free Trade Zone Junction to the northeast of the Project site. There is a number of alternative routes to access the Project site:</p> <ul style="list-style-type: none"> • From the centre of Adana province, it is possible to access the Project Area by following D400 (Adana-Osmaniye Road) until the intersection with D817 Highway (Ceyhan-Yumurtalik Road). After turning towards the D817 Highway, the Project Area can be reached through: <ul style="list-style-type: none"> ○ Alternative 1: D817 Highway and Ceyhan-Erzin Road and then following Ceyhan Dortyol Road to reach to the Project site; ○ Alternative 2: D817 Highway until Ceyhan Junction, then following E90 Motorway until Iskenderun Junction and E91 Motorway until Free Trade Zone Junction (which has 2x2 width). Finally, Ceyhan-Iskenderun Motorway and Free Trade Zone Connection Road is followed to reach to the Project site; • Adana Airport and Adana Bus Terminal are located in the city centre. The access from the Airport and Bus Terminal to the Project Area can be provided by following the aforementioned routes; and • From the surrounding cities (i.e., Mersin, Osmaniye, etc.), it is possible to reach to the Project Area by following D400 Highway. <p>In order to measure the traffic load on the access roads to the Project site, traffic counts were made at three points in July 2020. Based on the traffic counts, the number of heavy vehicles was established for Yumurtalik Free Trade Zone, Toros Agri Industry and Erzin OIZ facilities, etc.</p> <p>Marine Traffic: During the construction period of the Project, the highway will be used and there will be no increase in sea traffic. However, during the operation phase, propane that will be used as raw material for the Project, will be sourced through sea shipment. The Jetty will be composed of two approaching docks. Maximum of two vessels are expected to bring raw material to the Jetty in a month during the operation phase of the Project. Currently, there are fishermen who use the coastline for fishing.</p>
Biodiversity	<p>The desktop review of The International Union for Conservation of Nature (IUCN) data revealed the presence within the Area of Analysis (AoA) of about 989 species, of which 256 are plants, 276 are terrestrial animals, 120 are algae, 49 are zooplanktonic organisms, 200 are benthic species, 3 are marine turtles, 85 are marine vertebrates (82 are fish and 3 are marine mammals).</p>

Component	Description
	<p>According to the IUCN Red List, 4 species are classified as Critically Endangered (CR), 4 species are classified as Endangered (EN) and 6 species are classified as Vulnerable (VU). No endemic species were found in the AoA.</p> <p>Land use data collection and vegetation mapping were carried out simultaneously. There are 4 different habitat types observed within the Project site, each of which comprise different vegetation types: two natural and two modified habitats (see Habitat Maps in Annex K). Dry Mediterranean Lands with unpalatable non-vernal herbaceous vegetation and Maquis are the natural habitats, while Evergreen orchards and groves and Arable Land with unmixed crops grown by low-intensity agricultural methods are the two modified habitats.</p>
Cultural Heritage	<p>Publications on tangible and intangible cultural heritage related to the field of study and its immediate vicinity have been compiled in order to determine the cultural heritage potential of the Project and its associated facility area.</p> <p>Terrestrial Cultural Heritage: There are 25 archaeological sites in total located near the Project area and route. During the desk study, it was understood that there was one registered archaeological site in the Project and associated facility area. This site is Kurtpinar Ancient Waterway. In addition, there are 2 registered archaeological sites outside the Project area but within the borders of the Ceyhan Petrochemical Industrial Zone. These sites are Karanlık Kapi Remains 1st and 3rd Degree Archaeological Site and Medieval Turkish Cemetery. Another registered archaeological site located to the east of the Project area is Muttalip Huyuk, which remains in the Toros Tarim Facility today. Archaeological traces (irregular stones and ceramic pieces) were observed at two different locations, one inside the Project area and the other one is outside the Project area.</p> <p>Field works for intangible cultural heritage were conducted using qualitative interview method with 38 people in 7 settlements in the vicinity of the Project. Golovasi, Kurtpinari, Kurtkulagi, Sarimazi, Yukariburnaz and Aşagiburnaz settlements located at a close distance to the Project are inhabited by Yoruks. Unlike all these settlements, Cretan immigrants live in Turunçlu settlement. All the local people living in the region speak Turkish, but Turunçlu people also speak Crete. Except for the Turunclu people, residents of all other settlements are Sunni Muslims. The people of Turunclu are Bektashi. Some traditions and practices belonging to the turning points of life (birth, circumcision, military service, wedding, and death) still take place in the region.</p> <p>Marine Cultural Heritage: Bodrum Museum of Underwater Archaeology provided an opinion letter and a report on 03.07.2020. CPIR Port Project does not affect the areas where diving is prohibited within the scope of Article 35 of Law No. 863. The deepest point within the marine section of CPIR Port Project was measured as 13 m. No cultural assets that are required to be preserved within the scope of Law on Preservation of the Cultural and Natural Assets (No: 2863) were encountered during the study.</p>
Socioeconomics	<p>The Project is located in Incirli locality, Kurtpinari neighbourhood, Ceyhan district of Adana province. The closest settlement is the Kurtpinari neighbourhood with its two localities: Incirli and Karatepe. Kurtpinari, Karatepe, Sarimazi and Golovasi neighbourhoods are considered within the Primary Social Area of Influence.</p> <p>The population of the Adana is 2,258,718 with a population density of is 162 people per km². The total population of the Kurtpinari, Kurtkulagi, Sarimazi and Golovasi is 6,814 with an average household size of 3.57. There has been a decrease in the population of villages/neighbourhoods over the years due lack of employment opportunities, especially the youth generation immigrating to the city centers for jobs.</p> <p>25.5% of the workplaces in the area covered by the Project's Social Aol are engaged in the manufacturing business. Following the manufacturing sector, significant number of establishments operate in the construction sector; 23.1% of the business in the Project Aol are operating in construction sector. Overall, nearly half of the establishments employing 20 or more employees in Adana are engaged either in the manufacturing or construction sectors. Majority of the local residents of communities within the Social Aol derive their income through retirement pensions and obtain additional income through agriculture, livestock, fishing and trade activities. Grain and olive tree cultivation are the most common in agricultural production. In addition to these, sunflowers (for oil production) and fruit trees farming is also carried out. Animal husbandry activities are not common due to unfavourable conditions for husbandry and limited area for grazing lands, though these activities are still conducted. There are 2 fishermen groups within the Project Social Aol. The closest of these</p>

Component	Description
	<p>is the area located in Incirli. There are 7 boats that go out to sea for fishing. Boat owners and employees conduct fishing activities as an additional income generating activity. Fishing is not the only source of income, but it constitutes almost 50 percent of the income sources. There is a fishing cooperative in Golovasi and there are people whose only livelihood is fishing. There were more than 20 active fishermen. Fishing activities are conducted for 12 months. However, it decreases in summer due to fishing bans set by regulations.</p> <p>The dominant land use in the surrounding area of the Project site includes industrial facilities, forestation and forest areas located approximately 1.5 km distance in the CPIR area, as well as residential areas. Within the scope of the Project, there is physical and economic displacement due to land acquisition. 15 houses within the mobilization area, buffer zone and the broader CPIR Zone have been expropriated. Agricultural and pasture lands belonging to individuals, companies and the state were also expropriated.</p> <p>A local business (a fish restaurant) has been also identified in the vicinity of the Project site.</p>
Visual	<p>The Project site has an inclined topography; the elevation difference ranges from sea level to 55 m. The shoreline of the Project site extends along the rocky coast for approximately 1.5 km.</p> <p>The Project site is surrounded by industrial facilities, rural residential areas, scattered vacant lands, forest and forestation areas located in the CPIR, to the south of E90 Motorway (i.e. Adana-Sanlıurfa Road) and Ceyhan Iskenderun Motorway Free Trade Zone Connection Road.</p> <p>Some parts of the Project site included agricultural fields and olive groves; some parts are covered by Mediterranean-type bushes while other parts are covered by small annual plants. The shoreline is rocky in natural pattern.</p> <p>The dominant land use in the surrounding area of the Project site includes industrial facilities, scattered vacant lands, forestation and forest areas located in the CPIR area, as well as rural residential areas. Furthermore, there is a fish restaurant (outside the site boundaries) and a number of residential houses located to the southwest of the Project site near the shore.</p>

More detailed information on the baseline characteristics of the Project area is provided in the ESIA document.

5.2 Impact Assessment and Mitigation Measures

This section provides a summary of the high and medium (pre-mitigation) environmental and social potential adverse impacts and benefits, mitigation and management measures and residual impacts identified during the ESIA study for the construction, operational and decommissioning phases of the Project. Residual impacts are those that are predicted to remain once mitigation measures are applied.

Verification will be managed by Project Company as stated under their monitoring obligations within the ESMP and external audits.

Table 5.2. Geology, Soils, Sediments and Contaminated Land

Geology, Soils, Sediments and Contaminated Land		
Impacts	Mitigation/ Management Measures	Residual Impacts
Main potential impacts on geology, soil and subsoil conditions relate to the loss of land, increased soil erosion with consequent possible change in soil properties and soil and subsoil contamination due to accidental events and or improper or poor management of waste and hazardous materials.		

Non-Technical Summary

Geology, Soils, Sediments and Contaminated Land		
Impacts	Mitigation/ Management Measures	Residual Impacts
Seismic risk and impacts on soils were also assessed for the construction period, and the impact was assessed as low. For the operation period, the impact on soils is low.		
CONSTRUCTION		
Impacts on sediments	<ul style="list-style-type: none"> ✓ During soil stripping, necessary precautions will be taken to keep them separately intact. Top and subsoil will be deposited separately, and long-term erosion and sedimentation will be prevented through rehabilitation/planting; ✓ Stockpiles will be protected from erosion and contamination impacts, ✓ Slopes formed during construction (excavation, fill and stockpile slopes) will be provided with proper drainage so as to prevent sediment transport and collect stormwater; ✓ Rehabilitation/planting after the completion of the construction activities will be done to prevent long-term erosion and sediment transport. 	Negligible
OPERATION		
Impacts related to seismic risk	See Construction phase table.	Negligible
Impacts on sediments	The EPRP and other relevant MPs will be updated for operational phase and continue to be implemented.	Negligible

Table 5.3. Hydrology and Hydrogeology

Hydrology and Hydrogeology		
Impacts	Mitigation/ Management Measures	Residual Impacts
Main potential impacts on surface water relate to the deterioration of surface water quality due to soil erosion, wastewater discharges and possible accidental events such as spills. Main potential impacts on groundwater relate to risk on groundwater contamination due to the construction and operation activities. The impacts of activities on ground water and surface water were assessed as low prior to mitigation.		
CONSTRUCTION		
Impacts of Construction Activities on Seawater	The domestic wastewater to be generated during the construction phase of the Project will be collected in underground polyethylene septic tanks and necessary agreements will be made with the municipality for the collection and disposal of wastewater via vacuum trucks.	Low
OPERATION		
Impacts of Operation Activities on Seawater	A wastewater treatment plant (WWTP) will be established at the Project site to treat oil-contaminated wastewater and other contaminated wastewater streams originating from the process, utility, and offsite units in order to meet the regulatory limits.	Negligible

Table 5.4. Air Quality

Non-Technical Summary

Air Quality		
Impacts	Mitigation/ Management Measures	Residual Impacts
<p>During the construction of the Project, dust emissions will arise from blasting activities, earth movements, loading, unloading and transport of excavation materials both inside and outside the Project site. Air dispersion modelling study was undertaken for PM10 dispersion to estimate the air quality impacts associated with the construction activities.</p> <ul style="list-style-type: none"> Daily TPV value of PM₁₀ is increased by more than 70% creating a very high impact intensity at both measurement locations. The sensitivity of the immediate surrounding is considered to be high (i.e., presence of residential area) at <u>Monitoring Station 1</u> and low (i.e., presence of forest areas) at <u>Monitoring Station 2</u>; Yearly TPV value of PM₁₀ is increased by more than 70% resulting in a very high impact intensity at <u>Monitoring Station 1</u> with high sensitivity and increased approximately by 23% creating a medium impact intensity at <u>Monitoring Station 2</u> with low sensitivity. <p>Please note this table includes only impacts with High and Moderate significance.</p>		
CONSTRUCTION		
<p>Air Quality impact due to construction activities including blasting, vehicle emissions and dust generation</p>	<p>The ESIA includes mitigation and enhancement measures related to air emissions (Chapter 9 - Air Quality) such as a series of measures to reduce dust generation and exhaust gas emissions, which are already being implemented. These include dust suppression and control mainly during blasting activities, earth movements, loading, unloading and transport of excavation materials.</p> <p>An Air Quality Control and Monitoring Plan will be prepared, which will include mitigation measures that will be implemented to reduce dust emissions. Additionally, air pollutants will be monitored at nearby sensitive locations to ensure minimal impacts in accordance with the Air Quality Control and Monitoring Plan. During the first three months of the construction during earthworks, monthly PM₁₀ measurements shall be done. If the monitoring results are observed to be below limit values, measurements will continue to be conducted quarterly, if limit values are exceeded, the measurements will continue to be conducted monthly.</p>	<p>Low</p>
OPERATION		
<p>Air Quality impact due to emissions from the PDH-PP plant and vehicle movements</p>	<p>Mitigation of impacts on air quality will be guaranteed through development of an Air Quality Control and Monitoring Plan including adequate measures against emissions due to operation and vehicles.</p> <p>Emissions will be mitigated through, series of mitigations. The main mitigations are summarized below for reference:</p> <ul style="list-style-type: none"> ✓ Advanced equipment design to reduce fugitive emissions, ✓ Fugitive loss assessment and measurement study to identify process elements with the highest potential for fugitive loss; ✓ Equipment monitoring and maintenance (M&M) and leak detection and repair (LDAR) (e.g., a portable monitoring device) programme will be applied based on a component and service database in combination with the fugitive loss assessment and measurement; ✓ Dust emission reduction techniques, 	<p>Low to Medium</p>

Non-Technical Summary

Air Quality		
Impacts	Mitigation/ Management Measures	Residual Impacts
	<ul style="list-style-type: none"> ✓ Minimization of plant start-ups and stops to avoid peak emissions and reduce overall consumption (e.g., energy, monomers per tonne of product); ✓ Securing the reactor contents in case of emergency stops (e.g., by using containment systems) and recycling the contained material or to use it as fuel; ✓ To treat the air purge flows coming from degassing silos and reactor vents with one or more of the following techniques. 	

Table 5.5. Traffic

Traffic		
Impacts	Mitigation/ Management Measures	Residual Impacts
Impacts related to the construction and operation of the Project are increased land traffic and limitations related to marine use by local fishermen.		
CONSTRUCTION		
Impacts related to Terrestrial Traffic	<ul style="list-style-type: none"> • The Company will prepare a Construction Traffic Management Plan for the construction phase of the Project and implement it to minimize impacts as much as possible; • Training seminars on traffic safety will be given to all construction vehicle operators; • Information brochures (containing relevant contact information for possible complaints to the Project) will be distributed to all residential buildings and to the headman of the surrounding neighbourhoods; • Necessary measures will be taken to ensure their safety in Incirli Neighbourhood and residents will be informed when necessary; especially when schools are open. These measures will be planned in coordination with the relevant public institutions; • Shuttle service will be provided to the employees in order to reduce the traffic caused by the Project. The accommodation facility to be established within the Project Area will reduce the mobilization of employees, and the number of vehicles arriving at the site will be reduced. 	Low
Impacts related to Marine Traffic	<ul style="list-style-type: none"> • Marine Traffic Management Plan should be developed for the SPV responsible for construction of associated facility (no Marine Traffic Management Plan is to be developed for the Project); • The Marine Traffic Management Plan will cover such issues as: <ul style="list-style-type: none"> ○ Determination of navigation routes; ○ Measures to ensure competency of crews and to provide relevant training; ○ MARPOL compliance of vessels delivering product; 	Low

Traffic		
Impacts	Mitigation/ Management Measures	Residual Impacts
	<ul style="list-style-type: none"> ○ Proactive regular engagement with marine area users (in particular, with fishermen in Incirli and Golovasi); ○ Ensuring availability of grievance mechanism. 	
Impacts Related to Heavy Material Transportation	<ul style="list-style-type: none"> • Training seminars on traffic safety will be given to all construction vehicle operators; • During the transportation of heavy materials, communities will be informed at least 1 month before the works in order to provide meaningful timing for potential affected people to make necessary arrangements; • A person responsible for the heavy material transport plan will be appointed and the contact number of this person or of the Project CLO will be communicated to the communities (for example, through brochures, advertisements, announcements); • Power cuts required during transportation will be made locally. Communities will be informed about power cuts and transportation routes. School buses organisation will be informed and official institutions will be in contact; • There are trees on the route that will prevent the passage. These trees will be pruned; • Restoration works will start within a maximum of 2 days after the transportation works are completed. 	Low
OPERATION		
Impacts related to Terrestrial Traffic	<ul style="list-style-type: none"> • Development and implementation of the Operation Traffic Management Plan; • Coordination with relevant affected communities (in particular, Incirli) and authorities with regard to development and implementation of traffic safety measures; • Provision of shuttle service to employees to reduce traffic load; • Implementation of grievance mechanism, etc. 	Low
Impacts related to Marine Traffic	<ul style="list-style-type: none"> • Marine Traffic Management Plan will be developed for the SPV responsible for operation of associated facility (no Marine Traffic Management Plan is to be developed for the Project); • It shall be ensured by the Project Company that the ship propulsion power in port access areas shall be considered during the design stage to provide safe navigation of vessels; • It will be considered to offer marine safety training to main vessel companies and applying an incentive scheme for companies that can demonstrate good maintenance of their vessels and low accident statistics; • Avoid unnecessary vessel movements, if possible; • A grievance mechanism that allows communities to communicate concerns and have them addressed in a timely and effective manner shall be established and implemented. 	Negligible

Table 5.6. Terrestrial and Marine Ecology

Terrestrial and Marine Ecology		
Impacts	Mitigation/ Management Measures	Residual Impacts
<p>The main Biodiversity impacts that are associated with the construction and operation. Associated biodiversity features such as vegetation, displacement of mammals, reptiles and amphibians, and marine species have been identified and respective mitigation measures suggested. The NTS for Biodiversity has focused on Impacts of highest significance (as defined in Table 4.1), regarding the current state of the environment and project development.</p> <p>A Biodiversity Management Plan (BMP) has been prepared for the Project in accordance with relevant international best practice and guidelines. The BMP detailed the Project's biodiversity management initiatives, commitments, and obligations. The aim of the BMP is to safeguard and promote the viability of priority species and habitats associated with the Project.</p> <p>This BMP provides a framework for the implementation of the Project's biodiversity mitigation and management measures during the pre-construction / construction and operation phases.</p>		
CONSTRUCTION		
<p>Impacts related to Habitat Loss are expected due to the construction.</p>	<p>Stored topsoil will be used in the reinstatement of the disturbed habitats.</p> <p>Planting of native plant species in plantations to prevent erosion and ensure habitat integrity.</p> <p>After completion of the construction activities, the piles of the Jetty and the rocks to be filled will constitute a suitable living, nesting and feeding environment for biological environment. Filling these areas with the excavated materials from the same area should be favoured to the extent possible and the fill materials should not be easily dissolved in sea water.</p> <p>Appropriate emergency response procedures will be established for accidental spills.</p> <p>Airborne noise reduction guidelines will be implemented according to standards.</p> <p>Dust reduction practices will be implemented to minimize dust generation from transportation activities.</p> <p>The clearance of natural vegetation will be limited to the strip of land needed for the occupation of the project and the adjacent working width.</p> <p>The vegetation clearing activities will be planned outside the pick breeding periods (April – July) as far as it is practical.</p> <p>The width of access roads will be minimised.</p> <p>Landscaping works will be conducted after the completion of construction phase, where possible.</p> <p>Re-assess the condition of the habitat and prepare a report with photos showing the condition after the construction to decide if restoration/offsetting is required.</p> <p>Avoiding disposal of spoil/excess excavation materials on down-slope or in adjacent areas where it will affect sensitive natural habitats.</p> <p>Mobilization area and excavation material temporary storage area will not be located in natural habitats.</p> <p>Contractor will be kept on environmental protection matters and prohibit unnecessary disturbance, damage and harm to natural habitats, through clear delineation of</p>	<p>Low</p>

Terrestrial and Marine Ecology		
Impacts	Mitigation/ Management Measures	Residual Impacts
	<p>the boundaries of the work area to avoid encroachment into any critical, natural or modified habitats.</p> <p>Implement measures to ensure safe handling of chemicals and fuels, in accordance with the Hazardous Material Management Procedure.</p> <p>Training of the project personnel (i.e. construction managers, machine operators, workers) will be done on mitigation of the effects of construction on Natural/semi-natural habitats before the beginning of site preparation.</p>	
<p>Impacts related to plant species are expected due to the construction.</p>	<p>Conduct botanical field inventories to determine the locations of individuals/groups of vulnerable/endemic plant taxa.</p> <p>In order to minimise impacts on vulnerable plants species, tubers of the species should be collected prior to construction phase and replanted in areas that would not be impacted by the Project activities.</p> <p>In order to monitor success of the newly established populations, monitoring studies will be conducted during the flowering season of the species.</p> <p>Before the start of construction works, a survey will be conducted in the sand dunes for vulnerable species in the immediate vicinity.</p> <p>Micrositing: minimizing the work area, setting up physical barriers and complying with it throughout the work, choosing locations for encampment, material storage etc. which have a flexibility in location according to the constraints of biodiversity.</p> <p>The condition of fenced groups after the construction; and in case of unintentional lost/harm, documenting the number of individuals affected and including those into the supplementary seedling plantation program will be assessed and reported.</p>	
<p>Impacts related to fauna species are expected due to the construction.</p>	<p>Where free-ranging wildlife occurs, vehicle speeds will be reduced through implementation of speed control measures and the regular enforcement. Care is taken to select machines and equipment with low noise emissions.</p> <p>Amphibian, reptile and mammal species will be transported prior to land preparation and during construction activities in accordance with the mitigations given in the BMP.</p> <p>In cases where it is necessary to use the burrows/shelter area, the animal will be allowed to move away safely or the animal will be caught by digging the nest and transported to the nearest suitable habitat.</p> <p>The bat roosts will also be scanned during the pre-construction survey. In case such roosts are found, their locations will be recorded on maps.</p> <p>Roof type and holes under roofs are important; and friendly construction should be preferred specifically for birds and bats.</p>	

Terrestrial and Marine Ecology		
Impacts	Mitigation/ Management Measures	Residual Impacts
	<p>In case active roosts are found on the project area, micro-siting will be planned to avoid destruction.</p> <p>If micro-siting does not fully resolve, work with a bat specialist before construction works to determine possible avoidance and mitigation activities depending on the planned season of the construction works.</p> <p>During the pre-clearance survey walk-throughs, small permanent or temporary pools found in the project area will be mapped and photographed. The onsite biologist will report the findings to the construction manager to enable micro-siting. The avoided sites will be sign-posted in order to avoid the destruction/disturbance of the pools.</p> <p>Small puddles or semi-natural ponds in the Project site to support the amphibian species to breed in the area will be provided.</p> <p>Soil stripping activities conducted prior to construction activities will be performed preferably before winter season.</p> <p>Particular attention should be given to the vulnerable tortoise (<i>Testudo graeca</i>) to prevent loss.</p> <p>If catching prior to the construction activities cannot be completed, shelters/ burrows will be sign-posted. The maps of the locations of these shelters/ burrows will be shared with construction managers and relevant machine operators will be informed for planning of the ground construction works accordingly. The onsite biologist will be present on the site during the ground preparation/vegetation removal work to lead the machine operators in order to avoid harm to the underground fauna and their safe escape from the construction site.</p>	
Impacts related to Spreading of Alien invasive species due to the construction.	<p>An Invasive Species Management Plan (ISMP) will be developed and implemented for the Project.</p> <p>Botanical field inventories to determine the locations and population densities of individuals/groups of invasive species will be conducted.</p> <p>Invasive species control and eradication methods will be applied in line with the precautions in the ISMP and BMP.</p>	
Impacts related to Ecosystem Services due to the construction.	<p>A communication strategy will be developed to provide education and awareness on biodiversity measures with local stakeholders, including project-affected communities and fishermen. This will be led by a team of public relations and social experts to manage local liaison. The aim will be to raise community awareness of local biodiversity values, actions undertaken by project company and its partners for the management of biodiversity impacts, to support local community members who may want to sustain local biodiversity value and ecosystem services.</p>	
Impacts related to Marine Habitat Loss due to the construction.	<p>The filling area will be limited and will not be larger than the actual area.</p> <p>Filling activities will be avoided in March-June.</p>	

Terrestrial and Marine Ecology		
Impacts	Mitigation/ Management Measures	Residual Impacts
	Solid wastes will never be dumped into the sea and instead will be collected in a designated area and disposed of by licensed companies or municipalities.	
Impacts related all species	<p>Good practice animal welfare measures will be adopted throughout construction.</p> <p>These will include;</p> <ul style="list-style-type: none"> • Securing active construction sites to minimize risk of harm/trapping; • Minimizing the use and spread of lighting. 	
Impacts related to marine species due to the construction.	<p>Activities to be conducted between April – September will be accompanied by an expert on marine turtles.</p> <p>It is important to keep backfill activities to a minimum during the spring season and June. Noise, turbidity and mechanical effects adversely to sea creatures in the spring. As biological activities are minimal during the autumn and winter seasons, these times can be taken into account for undertaking marine construction works to minimize impacts.</p> <p>In order to assess potential gains, pre-feasibility studies will be conducted with specific emphasis on species such as sea turtle nesting can continue.</p> <p>Excavated or transported fill material will be analysed against any contamination and hazardous content.</p> <p>A communication strategy will be developed to provide education and awareness with local stakeholders.. This will be led by a team of public relations and social experts. The aim will be to raise community awareness, to support local community members who may want to sustain local biodiversity value and ecosystem services.</p> <p>Environmental Awareness training will be provided to all personnel to increase awareness about the marine species.</p> <p>Limit the speed of marine vehicles with very low speeds within 1 mile of the shore.</p> <p>In case of an accident involving marine turtles at the sea, the initial response will be given by the expert.</p> <p>No vehicle belonging to the project will be allowed to enter sea turtle nesting areas, especially during nesting periods.</p> <p>There will be no work directly on the sea turtle beach during the construction works. However, activities will be timed so that the nesting period is avoided, as work will still be done in close quarters.</p> <p>If this step is adopted, minimization measures will not be necessary. If this mitigation measure cannot be achieved, work will be avoided, at least, near the turtle exit or nesting sites during the night when turtles are most likely to nest or hatch. This is considered a secondary reduction step.</p>	

Terrestrial and Marine Ecology		
Impacts	Mitigation/ Management Measures	Residual Impacts
	<p>The seaside will not be blocked in order to ensure the uninterrupted movement of the hatchlings to the sea.</p> <p>Avoid preventing the movement of adult turtles to their “nesting areas” with non-permanent structures.</p> <p>To avoid underwater and airborne sound effects, first of all, machines with advanced technical features will be used.</p> <p>Lighting for construction and operation will be inward and downward facing to minimise light pollution in remote areas, and to minimize the disturbance to sea turtles.</p> <p>All ship operators will be trained in line with the BMP guidelines and necessary mitigations will be implemented.</p> <p>Of all the “noisy” activities, potentially the greatest concern is when driving scaffolding piles and during dredging. While planning the construction, it is necessary to use the scaffolding piles that have the qualifications to produce minimum noise.</p> <p>Long-term monitoring of the Mediterranean monk seal will be carried out in order to observe the negative effects caused by increased ship movements.</p> <p>Less noisy piles will be used instead of scaffolding piles.</p> <p>Working in the marine environment at night will be avoided. No work will be done when visibility is low.</p> <p>Training of all construction personnel on the potential impacts of the activities on marine mammals will take place.</p> <p>Entry and exit movements of ships to the construction area or operational port will be arranged.</p> <p>If marine mammals are seen in a 50 m radius area of the ship, ship speeds will be limited to the trailing speed. If necessary, the ship's route will be changed if it is safe to do so.</p> <p>Injury/death of marine mammals will be documented and reported.</p> <p>Filling works will be carried out especially in the rocky areas in the spring months. If this step is adopted, minimization measures will not be necessary.</p> <p>If the above effect is not achieved, working close to the spawning area will be avoided at least during the breeding season (15th April to 15th June).</p>	
Impacts related to Turbidity due to the construction.	<p>Use of silt fences, extending from sea bottom to the surface, around the dredging vessel. In this way, the generated turbidity will be limited within the fence and not affect larger areas.</p> <p>Filling works will be limited during unsuitable conditions; to minimise dispersion of the turbidity.</p>	
Impacts related to Waste generation due to the construction.	<p>The environmental conditions and variations will be monitored by a specifically structured team of experts</p>	

Terrestrial and Marine Ecology		
Impacts	Mitigation/ Management Measures	Residual Impacts
	<p>who will prepare environmental policies and procedures in line with relevant legislation and standards.</p> <p>Solid wastes shall never be dumped into the sea and instead will be collected in a designated area and disposed of by licensed companies or municipalities.</p> <p>Generated wastewater will never be discharged into the sea without prior treatment.</p>	
OPERATION		
Impacts related to Habitat Loss due to the operational activities	<p>Limit the Project activities to designated sites.</p> <p>Inform and train Project personnel.</p> <p>As a best management practice, where possible, in order to prevent/minimise loss of natural habitats in the region and to compensate for residual impacts Offset Strategy is recommended.</p> <p>In order to monitor success of the newly established vulnerable/endemic species populations, monitoring studies will be conducted during the flowering season in February-March.</p> <p>Solid wastes will never be dumped into the sea; these wastes should be collected in a designated area and disposed of by licensed companies or municipalities.</p> <p>It will be strictly prohibited to discharge bilge water in the port area or in the close surroundings; it will be collected separately. Generated wastewater will never be discharged into the sea without prior treatment.</p> <p>Contaminants to be generated during maintenance activities will not enter the port area. Chemicals such as paints and solvents, will be collected separately and disposed of by licensed companies.</p> <p>It would be beneficial to leave some natural areas untouched, to provide space for some species.</p> <p>It will be ensured that there is no ballast water discharge in the port area and ballast water will be managed in accordance with the International Convention on the Control and Management of Ship Ballast Water and Sediments (IMO).</p> <p>Revegetation of disturbed sites will be implemented within the same spring season, or within the upcoming spring season for disturbances occurring during the dry season.</p>	Low
Impacts related to flora and fauna species due to the operational activities	<p>Bird and bat-friendly construction will be preferred specifically for birds and bats species under the roofs.</p> <p>Lighting for security purposes will be inward and downward facing to minimise light pollution in remote areas, and to minimize the disturbance to nocturnal wildlife, birds, invertebrates and sea turtles.</p> <p>Faunal protection policies will be developed and enforced that prohibit all forms of hunting, any killing of animals and keeping of pets.</p>	

Terrestrial and Marine Ecology		
Impacts	Mitigation/ Management Measures	Residual Impacts
	<p>Only non-invasive and native species are to be used for rehabilitation.</p> <p>Invasive species control and eradication methods will be applied in line with the precautions in the ISMP and BMP.</p> <p>Plant food bushes, trees and water sources will be provided at the Project site to support the birds, where possible.</p> <p>Paint tall structures in bright colors and the maintain paintings so that they are visible to birds.</p> <p>Faunal protection policies will be developed and enforced that prohibit all forms of hunting, any killing of animals and keeping of pets.</p> <p>If necessary, seasonal monitoring studies can be carried out in terms of Mediterranean Monk Seal, taking into account the information obtained.</p> <p>Depending on the data obtained during the construction phase, regularly, 3 times a month, monitoring studies will be carried out by the expert at İncirli beach.</p> <p>In case of an accident involving marine turtles at the sea, the initial response will be given by the expert.</p> <p>All ship operators will be trained in line with the BMP and necessary mitigations will be implemented</p> <p>Avoid preventing the movement of adult turtles to their "nesting areas" with non-permanent structures.</p>	

Table 5.7. Social (Socioeconomics, Community Health and Safety, Labour and Working Conditions)

Social (Socio-Economics, Community Health and Safety, Labour and Working Conditions)		
Impacts	Mitigation/Management Measures	Residual Impacts
<p>The main social impacts are related to the economic and physical displacement caused by the land acquisition for the Project Area, Associated Terminal Facility, Broader CPIR Zone and Buffer Area. In addition, impacts related to labour and working conditions, community health and safety, and the restriction of marine use by fishermen are expected.</p> <p>The impacts of marine traffic on fishermen during the construction period was assessed as low.</p>		
CONSTRUCTION		

Social (Socio-Economics, Community Health and Safety, Labour and Working Conditions)		
Impacts	Mitigation/Management Measures	Residual Impacts
Impacts associated with land acquisition and resettlement	<ul style="list-style-type: none"> Land Acquisition Gap Analysis will be conducted to collect robust information on land acquisition and the status of economic and physical displacement conducted for the Project; Livelihood Restoration Plan and/or Resettlement Action Plan will be developed as relevant in line with international guidelines; The Project will seek to maximize the benefits for local communities in terms of both direct and indirect employment opportunities and purchasing of local goods and services, as well as by implementing Social Investment Plan; Local employment and Project Affected People (PAP) who lost income previously during the expropriation process will be prioritized for employment opportunities, as feasible; Grievance mechanism will be disclosed to the affected community and will be provided as a means of encouraging affected people to state their grievances about the land acquisition. 	Low
Labor influx	<ul style="list-style-type: none"> The Project will provide job opportunities for the residents of nearby settlements to the extent possible; Code of Conduct will be developed in compliance with the Turkish legislation and international standards. Hard copies will be provided in Turkish and English. It will outline expected behaviour with respect to their daily interactions with local residents and users of public amenities. In particular, it will cover issues related to ban on alcohol and drugs use, gender-based violence and harassment (GBVH), etc.; Training to the Project workers will be conducted with regard to community health, safety and security issues (including on the Code of Conduct and workers' awareness of risk of sexually transmitted diseases (particularly HIV/AIDS), and on availability of confidential consultation services at the medical center(s) when an infection is suspected); Community Health Safety and Security Plan will be developed and implemented; The Company will develop and implement Accommodation Camp Management Plan to ensure adequate living conditions and conditions for workers' rest are provided to the Project workers, that will also contribute to minimization of contacts between Project workers and residents; Temporary loss of, or access to infrastructure or services shall be avoided by providing alternative routes and roads, as necessary; Local communities will be informed on program and sequence of works; 	Medium

Social (Socio-Economics, Community Health and Safety, Labour and Working Conditions)		
Impacts	Mitigation/Management Measures	Residual Impacts
	<ul style="list-style-type: none"> In case of using local roads for transportation, repair works will be made in collaboration with the local authorities; The Company will coordinate with relevant authorities and/or relevant social infrastructure facilities (health care and educational facilities, etc.) as relevant in case additional strain on these facilities is anticipated; Implementation of the SEP will also contribute to maintaining regular communication with affected parties and timely identification of potential issues associated with workers' influx and relevant impacts; The Project Company will establish and implement a grievance mechanism. 	
Life and fire risks on neighbourhoods	<ul style="list-style-type: none"> The Management System of the Project will contain an Emergency Preparedness and Response Plan (EPRP) that considers the role of communities and community infrastructure as appropriate in responding to emergency events; The Project Company will coordinate with emergency responders to ensure that appropriate first aid is provided in the event of accidents; Trainings will be provided to personnel on first aid. 	Medium
Impacts of Construction Activities on Labour Condition	<ul style="list-style-type: none"> The Project Company will develop a HR Policy to cover the key provisions of IFC PS 2 and EBRD PR2. The HR Policy will also apply to all Project (sub)contractors and attached to all the contracts (including supply chain) concluded; The Contractor personnel who will work on the Project will also be recruited in accordance with this policy and it will be ensured that all employees have equal rights and conditions; Insurance will be provided to all workers under Social Security Institution; Supply Chain Management Plan, including Purchasing and Supplier Evaluation Procedure will be developed and implemented; The Project will develop and implement Personnel Selection and Employment Procedure. Equal conditions for all employees will be guaranteed by the HR policy and Labour Management Plan; The Project Company will ensure that all mitigation measures given within the scope of the Project are valid for the contractor and supply chain employees; All prohibitions on child labour and forced labour will be specified in the HR policy; There will be no discrimination or retaliation against workers who join these unions and engage in collective bargaining; All of the Project Workers including subcontractors will sign the Code of Conduct along with their employment contract, etc. 	Low

Social (Socio-Economics, Community Health and Safety, Labour and Working Conditions)		
Impacts	Mitigation/Management Measures	Residual Impacts
Impacts of Construction Activities related to Health and Safety	<ul style="list-style-type: none"> • Occupational Health and Safety Management Plan will be prepared by Project Company; • A grievance mechanism will be developed for employees and included in the Environmental and Social Management System (ESMS); • All workers (including subcontractors) will be trained on health and safety, and "Emergency Preparedness and Response Plan" to respond timely to potential incidents; • All accidents and incidents will be recorded. The efficiency of health and safety practices will be monitored through internal and external audits and corrective actions will be taken if required; • All construction site facilities shall be constructed in accordance with the specifications and regulations of the Turkish and IFI Environmental, Health and Safety (EHS) standards. Project Company shall ensure that accommodation of workers and provision of basic services to workers are managed in line with the guidance note on worker's accommodation published by International Finance Corporation (IFC) and European Bank for Reconstruction and Development (EBRD) (Worker's Accommodation: Processes and Standards); • Dust emissions and noise generation will be minimized to the extent possible with the implementation of mitigation measures; • Workers (including subcontractors) will be provided safety briefings every day before the work starts and provided with necessary personal protective equipment; • Work permits will be required for high-risk activities such as working at heights, operation of heavy equipment and similar; • Project Company will place and check all warnings and signs present and required to be placed as a security measure in the designated locations within the Project site. Moreover, the Project Company will perform necessary security arrangements in accordance with the Turkish regulatory requirements; • Project Company will ensure that the employed personnel fully obey all the published process instructions/manuals related to (but not limited to) safety, provisions of contract and other relevant legislation; • Risks from hazardous material and hazardous wastes will be minimized through the Hazardous Material Management Plan and Waste Management Plan. These plans will be developed, implemented and monitored; • Project Company will ensure that all the personnel undergo the training as stipulated in the health and safety legislation; 	Low

Non-Technical Summary

Social (Socio-Economics, Community Health and Safety, Labour and Working Conditions)		
Impacts	Mitigation/Management Measures	Residual Impacts
	<ul style="list-style-type: none"> Project Company will ensure that the installations, equipment, systems, buildings and utilities do not form a threat to anyone in terms of work health and safety; Confined space entry and working at height procedures will be prepared and implemented. Entry to confined spaces and working at height will be controlled and avoided where possible; Emergency Preparedness and Response Plan will be prepared and implemented to respond timely to the incidents for terrestrial and marine sections of the Project; The measures related to Disaster Management, which includes crisis management against unplanned events (spill, fire, leakage, etc.), will be evaluated within the EPRP and the plan will be implemented; Indoor air quality monitoring will be conducted, and signage will be placed to locations where there are elevated levels of emissions and personal protective equipment (PPE) is required; Fire risk will be controlled with appropriate ventilation, temperature control and detectors, etc. 	
OPERATION		
Impacts of road and marine traffic on local communities	<ul style="list-style-type: none"> The Company will prepare Operation Traffic Management Plan for operation phase of the Project and implement it in order to minimize the impacts to the extent possible; Communities will be regularly informed on traffic activities. Communication with the communities (especially Incirli) will be maintained by the Project Community Liaison Officer and by such means as local newspapers, radio, brochures, advertisements and announcements to be left at the mukhtar's offices; Grievance mechanism will be implemented; <p>A Marine Traffic Management Plan will be prepared and implemented covering operation phase of the Project.</p>	Low
Restrictions on Incirli and Golovasi Fishermen's marine use		

Social (Socio-Economics, Community Health and Safety, Labour and Working Conditions)		
Impacts	Mitigation/Management Measures	Residual Impacts
Life and fire risks on neighbourhoods	<ul style="list-style-type: none"> The Company will prepare Operation Traffic Management Plan for operation phase of the Project and implement it in order to minimize the impacts to the extent possible; Communities will be regularly informed on traffic activities. Communication with the communities (especially Incirli) will be maintained by the Project Community Liaison Officer and by such means as local newspapers, radio, brochures, advertisements and announcements to be left at the mukhtar's offices; Shuttle service will be provided to employees to reduce traffic load; Grievance mechanism will be implemented; A Marine Traffic Management Plan will be prepared and implemented covering operation phase of the Project. The Project Company will coordinate with emergency responders to ensure that appropriate first aid is provided in the event of accidents; Disaster Management Plan including crisis management and unplanned events will prepared for operation phase of the Project; Trainings will be provided to personnel on first aid. 	Low
Impacts of Conflict with Security Personnel	<ul style="list-style-type: none"> A Security Management Plan will be developed and implemented during the operation phase of the Project. Security will be provided in a manner that does not jeopardize the community's safety or Ceyhan PP A.Ş.'s relationship with the community and that is consistent with national requirements; International best practices will be applied to hiring, training and mobilizing security staff. Ceyhan PP A.Ş. will ensure that security personnel have not been involved in past abuses and are adequately trained. Force will only be sanctioned in preventive or defensive circumstances in proportion to the threat and security will operate within the law. The grievance mechanism will allow communities to express concerns in accordance with requirements of IFC and EBRD standards. 	Low
Labor influx	<ul style="list-style-type: none"> The Project will provide job opportunities for the residents of nearby settlements to the extent possible; Code of Conduct will be developed in compliance with the Turkish legislation and international standards. Hard copies will be provided in Turkish and English. It will outline expected behaviour with respect to their daily interactions with local residents and users of public amenities. In particular, it will cover issues related to ban on alcohol and drugs use, GBVH, etc.; Training to the Project workers will be conducted with regard to community health, safety and security issues (including on the Code of Conduct and workers' awareness of risk of sexually transmitted diseases 	Low

Non-Technical Summary

Social (Socio-Economics, Community Health and Safety, Labour and Working Conditions)		
Impacts	Mitigation/Management Measures	Residual Impacts
	<p>(particularly HIV/AIDS), and on availability of confidential consultation services at the medical center(s) when an infection is suspected);</p> <ul style="list-style-type: none"> • Community Health Safety and Security Plan will be developed and implemented; • Temporary loss of, or access to, infrastructure or services should be avoided by providing alternative routes and roads, as necessary; • Local communities will be informed on program and sequence of works. • In case of using local roads for transportation, repair works will be made in collaboration with the local authorities; • The Company will coordinate with relevant authorities and/or relevant social infrastructure facilities (health care and educational facilities, etc.) as relevant in case additional strain on these facilities is anticipated; • Implementation of the SEP will also contribute to maintaining regular communication with affected parties and timely identification of potential issues associated with workers' influx and relevant impacts; • The Project Company will establish and implement a grievance mechanism. 	
Impacts of Operation Activities related to Labour Conditions	Mitigation measures to be taken for the construction phase will also be applied for the operational phase.	Low
Impacts of Operation Activities on Health and Safety	Mitigation measures to be taken for the construction phase will also be applied for the operational phase.	Low

Table 5.8. Visual

Visual		
Impacts	Mitigation/ Management Measures	Residual Impacts
<p>Most of the proposed structures will not be noticeable from the nearest residential areas, with the possible exception of the flare unit, emergency lighting masts and jetty, which may be visible, both directly and in the form of an increase in the level of illumination of the near-ground atmosphere and coastal zone, beyond the Project areas.</p>		
CONSTRUCTION		
Impacts of Construction Activities on Landscape Structure	<ul style="list-style-type: none"> • The placement of temporary construction camps should be carefully considered in order to not negatively influence the future perception of the facility; • Secondary visual impacts associated with the construction phase, such as the sight of construction vehicles, dust and excavated materials should be managed to reduce visual impacts. The use of dust-suppression techniques on the access roads (where required) and the timely removal of wastes will assist in doing this. 	Negligible

Non-Technical Summary

Visual		
Impacts	Mitigation/ Management Measures	Residual Impacts
OPERATION		
Impacts of Operation Activities on Landscape Structure	<ul style="list-style-type: none"> The recommendations related to mitigation of the visual impact of the Project components (flare and jetty) are limited as no amount of vegetation screening or landscaping would be able to hide structures of these dimensions; The natural and relatively unspoiled wide-open views surrounding the site Project components should be transformed for the entire operational lifespan of the facility via Planting in areas which do not have to remain open for operational reasons including appropriately selected vegetation. 	Low

Table 5.9. Cumulative Impact Assessment

Cumulative Impact Assessment		
Specific VECs ⁵	Mitigation/ Management Measures	Residual Impacts
<p>Main cumulative impacts are resulted from ongoing and foreseeable developments as per below:</p> <ul style="list-style-type: none"> ✓ BOTAS Ceyhan Marine Oil Terminal – existing activity; ✓ Toros Agri Industry and Terminal – existing; ✓ Yumurtalik Free Trade Zone – existing; ✓ SANKO Petrochemical Port Facility – existing; ✓ Isken Sugoza Thermal Power Plant – existing; ✓ Ceyhan Petrochemical Industrial Region (CPIR) – planned; ✓ Ceyhan Petrochemical Industrial Region Port (CPIR Port) – planned; ✓ Waste reception facility to be established in Yumurtalik District by Gizem Denizcilik Akaryakit Pazarlama Nakliyat Ticaret Ltd. Şti. (Gizem Denizcilik) – planned; ✓ Platform and Pipeline Construction Project by Alkaport Ceyhan Liman İşletmeleri A.Ş – planned; ✓ Ceyhan Organised Industrial Zone (OIZ) and Erzin OIZ – planned; ✓ Railway crossing – planned. <p>For the project, there are cumulative impacts on 7 specific VECs including biodiversity, water use and surface water quality, air quality, environmental noise, traffic, community health and safety and socio-economics, waste.</p>		
Air Quality	<p>Mitigation measures were identified in the relevant chapters of the ESIA report (Chapter 9: Air Quality). Additional mitigation measures include:</p> <p>Coordination with the CPIR Management Company and BOTAS regarding potential impacts on air quality;</p>	-
Environmental Noise	<p>Mitigation measures were identified in the relevant chapters of the ESIA report (Chapter 10: Noise) Additional mitigation measures include:</p>	-

⁵ Valued Environmental and Social Components.

Non-Technical Summary

Cumulative Impact Assessment		
Specific VECs ⁵	Mitigation/ Management Measures	Residual Impacts
	Coordination with the CPIR Management Company and BOTAS regarding potential noise impacts.	
Biodiversity	Mitigation measures were identified in the relevant chapters of the ESIA report (Chapter 12: Terrestrial and Marine Ecology) Additional mitigation measures include: Coordination with the CPIR Management Company and BOTAS regarding potential impacts on biodiversity.	-
Community Health and Safety and Socio-economics	Mitigation measures were identified in the relevant chapters of the ESIA report (Chapter 14: Socio-economics and Chapter 15: Community Health and Safety). Additional mitigation measures include: <ul style="list-style-type: none"> • Coordination with the CPIR Management Company and BOTAS regarding potential impacts on Incirli community and Incirli beach related to workers' influx; • Coordination with CPIR Management Company and other companies operating in the area regarding traffic impacts and community safety; • Cooperation with the CPIR Management Company and BOTAS regarding potential impacts on fishermen in Incirli and Golovasi; • Coordination with the CPIR Management Company regarding land acquisition impacts for the broader CPIR area. Coordination with the CPIR Management Company and other companies in the area regarding social investment activities and employment opportunities.	-

5.3 Environmental Hazards

The major natural hazards identified as potentially affecting the Project are:

- Earthquake;
- Stability of slopes;
- High rainfall and flooding;
- Ambient temperature and heat stress;

The risk assessment has assumed that the Project is designed and operated in accordance with good industry practice, and measures to manage risks have been identified. The Project location show that many of the identified hazards/risks are low/negligible.

6 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

In order to ensure that the E&S issues identified during the assessment are effectively managed, a series of environmental and social management and monitoring plans (ESMMPs or “management plans”) will be developed. These plans will outline appropriate mitigation and management measures that are needed to ensure acceptable levels of E&S performance through both construction and operation and the need for the Project to set enough resources (human and financial) to make sure these plans are implemented.

The key elements of the management plans are provided in an overarching ESMP framework, prepared under the scope of this ESIA, in a tabular format. The Project Company, with its contractors, is expected to use this as a basis for developing the detailed management plans during construction, operational and decommissioning phases of the Project. The following plans and procedures are described in the ESMP. A number of plans and policies, including but not limited presented in Table 6.1, will be or already have been developed to achieve EHSS objectives for both construction and operation phases:

Each management plan (MP) will be developed to consolidate and specify all topic- and activity-specific commitments, actions and legal/permit requirements, including:

- Mitigation measures and management actions to address potential risks and impacts;
- Key monitoring requirements;
- Roles and responsibilities for management and monitoring measures;
- Key competency and training requirements; and
- Key performance indicators (KPIs) for assessing the performance.

The plans will be ‘living documents’ that are regularly reviewed and updated as necessary.

The Project Company will have ultimate responsibility for implementing the management plans through the application of its integrated ESMS and for ensuring, via contract conditions, that the EPC Subcontractor and other subcontractors are obliged to implement all mitigation measures relevant to their activities.

The monitoring requirements preliminarily identified in this ESIA and in the ESMP Framework will be included in detailed MPs and will be used for monitoring the Project. Contractor monthly EHS reports, Project Proponent external reports and independent monitoring reports are recommended to be prepared periodically for the Project.

Table 6.1. Project Environmental and Social Management System

Project Environmental and Social Management System	
HR Policy including Code of Conduct	
EHSS Policy	
Environmental and Social Management Plan (ESMP)	
<ul style="list-style-type: none"> • Biodiversity Management Plan, including: <ul style="list-style-type: none"> ○ Biodiversity Action Plan – Terrestrial; ○ Biodiversity Action Plan – Marine; • Community Health, Safety and Security Plan; • Cultural Heritage Management Plan, including: <ul style="list-style-type: none"> ○ Chance Find Procedure; • Management of Change Plan; • Labour and Working Conditions Management Plan, including: <ul style="list-style-type: none"> ○ Personnel Selection and Employment Procedure; ○ Worker Grievance Mechanism; • Procurement Procedure; • Subcontractor Management and Monitoring Plan; • Supply Chain Management Plan, including: <ul style="list-style-type: none"> ○ Purchasing and Supplier Evaluation Procedure; 	
Construction (EPC Contractor)	Operation (O&M Management Company)
Construction Environmental and Social Management Plan (CESMP); <ul style="list-style-type: none"> • Hazardous Material Management Plan; • Soil Management Plan; • Waste Management Plan; • Construction Air Quality Control and Monitoring Plan; • Construction Noise Control and Monitoring Plan; • Construction Surface Water and Wastewater Management Plan; • Construction Traffic Management Plan; • Construction Disaster Management Plan; • Construction Emergency Preparedness and Response Plan, including: <ul style="list-style-type: none"> ○ Fire Safety Procedure; • Subcontractor Management and Monitoring Plan; • Accommodation Camp Management Plan; • Community Health, Safety and Security Plan; • Construction Occupational Health and Safety Management Plan; • Blasting Management Plan; • Management of Change Plan; • Subcontractor Management and Monitoring Plan; • Construction Supply Chain Management Plan. 	Operation Environmental and Social Management Plan (OESMP); <ul style="list-style-type: none"> • Operation Hazardous Material Management Plan; • Operation Soil Management Plan; • Operation Waste Management Plan; • Operation Air Quality Control and Monitoring Plan; • Operation Noise Control and Monitoring Plan; • Operation Surface Water and Wastewater Management Plan; • Operation Traffic Management Plan; • Operation Disaster Management Plan; • Operation Emergency Preparedness and Response Plan, including: <ul style="list-style-type: none"> ○ Fire Safety Procedure; • Community Health, Safety and Security Plan; • Occupational Health and Safety Management Plan; • Subcontractor Management and Monitoring Plan; • Operation Supply Chain Management Plan.
Climate Change Risk Assessment (CCRA)	
Life Cycle Assessment (LCA)	
Social Investment Plan	

Non-Technical Summary

Security Management Plan
Stakeholder Engagement Plan, including Grievance Mechanism

7 CONCLUSIONS

The ESIA has been conducted for the Project in accordance with relevant environmental and social guidelines of the International Finance Corporation with an overall objective to ensure acceptable environmental and social performance of the Ceyhan Propane Dehydrogenation - Polypropylene Production Project. The proposed complex shall consist of a Propane Dehydrogenation Unit (PDH), which utilizes propane as feedstock for conversion into propylene through De-Hydrogenation route. The generated propylene from the PDH unit will be used in a Polypropylene unit (PP) to produce the end product. Based on the assessment results within the scope of the ESIA it is concluded that the main residual impacts for the Project will be:

- Impacts on air quality;
- Noise impacts mainly during blasting;
- Biodiversity impacts; and
- Relevant social impacts.

Regarding the air quality, due to potential long-residence times of certain Volatile Organic Compounds (VOC) types, the residual impacts on the sensitive receptors are still evaluated to be low to medium. However, the selection of the advanced equipment design for reduction of fugitive emissions, continuous inspection, and monitoring at the potential sources of emissions and at the sensitive receptor points will contribute to prevention of such impacts.

In general, mitigation regarding best practice such as regular maintenance of the equipment, proving a sufficient distance between sensitive receptors and noisy activities (i.e. location of the electricity generators, pumps and motors etc.), construction planning of noisy activities, and training of workers etc. are considered sufficient for minimization of the noise impacts. Additionally, regular monitoring of noise is necessary for understanding the effectiveness of the mitigation measures.

As recommended in this ESIA, additional biodiversity studies were conducted. The study findings have been used to update the existing assessment of biodiversity impacts and proposed mitigation measures and are presented in the ESIA. Findings confirm that the Project is not located in Critical Habitat. The need for the development of a Biodiversity Action Plan is thus confirmed, alongside the Biodiversity Management Plan recommended by this ESIA, to manage the associated impacts to biodiversity.

Additional data on past land acquisition and physical and economic displacement were collected. Land Acquisition Gap Analysis Report has been prepared to identify gaps in the expropriation process conducted for the Project. After this report, it is foreseen that Livelihood Restoration Plan (LRP) and/or Resettlement Action Plan (RAP) will be developed as needed in line with international guidelines..

In general, the ESIA concludes that the mitigation measures identified within the ESMP framework and the ESIA document, if properly implemented, will help to reduce the significance of impacts, bringing impacts that have been assessed to have medium / high significance to be reduced to low to medium.