

Syrdarya CCGT Project Republic of Uzbekistan

ESIA: Volume 1

Non-Technical Summary



October 2022, v1.2

DOCUMENT INFORMATION

PROJECT NAME	Syrdarya CCGT Project
5Cs PROJECT NUMBER	2112/003
DOCUMENT TITLE	ESIA: Volume 1 – Non-Technical Summary
CLIENT	EDF, Nebras, Sojitz & Kyuden
5Cs PROJECT MANAGER	Shiraz Khalid
5Cs PROJECT DIRECTOR	Max Burrow

DOCUMENT CONTROL

VERSION	DATE	DESCRIPTION	AUTHOR	REVIEWER	APPROVER
1.0	29/07/2022	ESIA: Volume 1 - NTS	MKB	CS	KRW
1.1	01/08/2022	Updates following client comments	MKB	CS	KRW
1.2	03/10/2022	Updated version	SK	MKB	KW



1	Financial Capital	Regardless of location, mode of delivery or function, all organisations are dependent on
2	Social Capital	<i>The 5 Capitals of Sustainable Development</i> to enable long term delivery of its products or services.
3	Natural Capital	
4	Manufactured Capital	Sustainability is at the heart of everything that 5 Capitals achieves. Wherever we work, we strive to provide our clients with the means to maintain and enhance these stocks of capital assets.
5	Human Capital	

DISCLAIMER

5 Capitals cannot accept responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose.
This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from the party which commissioned it.

This document is issued for the party which commissioned it and for specific purposes connected with the above-identified project only. It should not be relied upon by any other party or used for any other purpose

CONTENTS

1	INTRODUCTION	3
1.1	The Project	3
1.1.1	Project Financing and Disclosure	3
1.2	Background and Rationale	4
1.3	Related Project Environmental & Social Documents	7
1.3.1	Environmental & Social Due Diligence Assessment and ESAP	7
2	PROJECT SUMMARY	8
2.1	Key Project Information	8
2.2	Project Location	8
2.3	Land Ownership and Land Use	9
2.3.1	Land Ownership	9
2.3.2	Existing Land Users	9
2.3.3	Project Land Lease	10
2.4	Project Description Summary	10
2.5	Project Alternatives	11
2.5.1	No Project Scenario	11
2.5.2	Alternative Location	11
2.5.3	Best Available Techniques (BAT)	12
2.6	Project Construction & Commissioning	13
2.7	Project Operations	13
2.8	Project Milestones	13
2.9	Decommissioning of the Plant	14
3	ESIA STAGE - STAKEHOLDER ENGAGEMENT	15
4	SUMMARY OF MAIN ENVIRONMENTAL & SOCIAL IMPACTS	17
4.1	Air Emissions and Ambient Air Quality	17
4.2	Noise and Vibration	21
4.3	Water Resources and Water Environment	23
4.4	Climate Change	27
4.5	Terrestrial Ecology	29
4.6	Soil, Geology and Groundwater	30

4.7	Solid Waste and Wastewater Management	31
4.8	Archaeology and Cultural Heritage	33
4.9	Landscape and Visual Amenity	34
4.10	Socioeconomics	34
4.11	Community Health, Safety and Security	35
4.12	Human Rights	36
4.13	Impacts from Unplanned Events	37
4.14	Cumulative Impacts	37
4.15	Transboundary Impacts	37
5	STAKEHOLDER ENGAGEMENT & GRIEVANCE MECHANISM	39
5.1	On-going Engagement	39
5.2	Grievance Mechanism	39
5.2.1	ESIA Stage Grievance Mechanism	39
5.2.2	Project Grievance Mechanism	40
6	ENVIRONMENTAL & SOCIAL MANAGEMENT & MONITORING	42
6.1	Independent Auditing and Monitoring	42

1 INTRODUCTION

1.1 The Project

The government of the Republic of Uzbekistan continues to enhance its power generation infrastructure to improve the supply and efficiency of electrical generation, thereby boosting economic growth and social development. As part of this, the government plans to develop the Syrdarya Combined Cycle Gas Turbine (CCGT) Project (the 'Project'), a new gas fired Independent Power Plant (IPP) with a power generation capacity of 1600 MW.

The Project will be developed jointly by Electricite de France (EDF), Nebras Power, Sojitz Corporation and Kyuden International 'the Consortium'. The Consortium have established a special purpose vehicle 'Project Company' called 'ENERSOK Foreign Enterprise Limited Liability Company', registered in the Republic of Uzbekistan with the commercial registration number 1095919. The Project Company have entered into a 25-year Power Purchase Agreement (PPA) with JSC 'National Electric Grid of Uzbekistan', who will be the off-taker of the generated electricity. Under the PPA, the Project shall have a net dependable capacity of 1,600 MW at average site conditions and shall comprise two gas turbine generators and one steam turbine generator. The Project will operate solely on natural gas (without back-up fuel) and will contribute to the electrical baseload of the Uzbekistan grid.

The Project scope also includes design and construction of raw water intake and process water outfall structures connected to the nearby canal as part of the plant's cooling system. The Project will connect to a planned 500/220kV substation (transmission facilities) which will be a common facility constructed as part of the ACWA Power Syrdarya IPP CCGT which will be located adjacent to the Project site. This facility is not part of the Project's scope and is not considered as an Associated Facility of the Project.

This Non-Technical Summary (NTS) of the Environmental & Social Impact Assessment (ESIA) provides a description of the Project, and describes the potential benefits and impacts associated with its construction and operation. It also outlines how these will be mitigated (fully detailed in 'ESIA: Volume 2 – Main Text'). In addition, it provides an overview of the public consultation activities and the approach to future stakeholder engagement, which is delineated in the standalone Stakeholder Engagement Plan (SEP).

1.1.1 Project Financing and Disclosure

This ESIA NTS (and broader E&S package) has been prepared for the potential financing of the Project by the targeted international lenders including JBIC, NEXI and IFC. The respective lenders will undertake a process of Environmental & Social Due Diligence/Review to ensure

that the Project can be accepted for financing under their respective Environmental & Social Policies. Besides internal specialists, this will include the engagement of an independent consultant who will evaluate and advise the lenders as part of the Due Diligence. It is expected that each of the lenders will categorise the Project, as 'Category A' in line with their internal policies. This categorisation is essentially the highest category and requires public disclosure by the banks, on their websites as a minimum (note: disclosure sessions for local communities in person will also take place). It is noted that the duration of disclosure periods following E&S review by JBIC and NEXI are not set, but that this could be expected up to 60-days under IFC financing. During this period anybody has the right to comment, object, or otherwise submit a grievance in relation to the Project and the potential financing from these lenders. Each lender has a process for receiving such comments/objections (information online at their websites), but the Project's ESIA stage grievance mechanism will remain open. Please refer to Section 5 of this report for details on the ESIA stage grievance mechanism and how this can be accessed.

1.2 Background and Rationale

Uzbekistan's power sector faces certain challenges. A key challenge is the energy use per unit of GDP, which is known to be more than 3 times higher than the average for Europe and the Central Asia region and makes it one of the most energy intensive countries in the world¹. Efforts to improve efficiency have been on-going with several strategic modernisation projects (including at the existing Syrdarya Thermal Power Plant), however electricity demand is also expected to grow steadily along with forecasted economic growth which is projected at approximately 6% over the next 5 to 10 years.

Since 2018, IFC has been advising the government of Uzbekistan on attracting private investments in the energy sector. With regard to this project, IFC advised the Government of Uzbekistan (GoU) on the structuring and implementation of the public-private partnership (PPP) and assisted in the competitive international tender, awarded to the Client. This high-efficiency thermal power plant which will utilise modern equipment that will be part of the energy transformation that will help modernize Uzbekistan's power infrastructure, improve the supply of electricity, and allow the country to significantly increase its efficiency in the usage of natural gas for power generation purposes. It is being built on land adjacent to another similar CCGT project (awarded to ACWA Power) currently under construction.

¹ JSC National Electric Networks of the Republic of Uzbekistan for the World Bank (WB). 2021. Uzbekistan: Electricity Sector Transformation and Resilient Transmission (ESTART) Project (P171683) Draft

EXISTING POWER GENERATION INFRASTRUCTURE IN LOCAL AREA

The Project site is located in close proximity to the Syrdarya Thermal Power Plant (TPP), which currently operates with eight modernised units. The plant was originally commissioned between 1972 & 1981 and operated for most of its life with ten units. The TPP is dual-fuelled by a combination of natural gas and fuel oil and is understood to also output heat to certain receivers in the local area. The Ministry of Energy has advised that modernisation works were undertaken in recent years to eight of these units, which are now in operation. These works have enabled increased efficiency.

It is understood that the Project (including the aforementioned existing Syrdarya TPP modernisations and ACWA Power Syrdarya IPP CCGT) is an essential part of the approved Generation Masterplan of the Republic of Uzbekistan. Shukhrat Vafaev, Deputy Minister of Investments and Foreign Trade stated that *'...the project will help to tackle the current challenges faced by Uzbekistan's power sector. The successful implementation of this PPP will increase the stability of electricity supply and further ensure the efficient use of scarce natural resources.'*

In order to align with broader climate change requirements, the government is targeting the combination of these modernisations (with other renewable energy development) and the development of the new CCGT projects to:

- Increase the stability of power supply to customers;
- Increase the efficiency of power generation;
- Achieve fuel savings;
- Improving local environmental conditions by reducing gross TPP emissions; and
- Reducing carbon intensity of electricity generation.

The assessment of cumulative environmental & social impacts therefore considers the future situation of the Project, the ACWA Power IPP CCGT project and modernised Syrdarya TPP.

NATIONAL EIA

A Project specific Stage I EIA was submitted to the SCEEP on 18th June 2022 by 5 Capitals' sub-consultant, Juru Energy (Tashkent), and approved with 'Positive Conclusions' on 6th July 2022. The approval allows for the commencement of Project construction activities.

As part of the national EIA process, planned activities of certain types of projects in Uzbekistan are subject to public hearings which is a requirement since December 2020. Such recommendations are described in the Resolution of the Cabinet of Ministries of the Republic of Uzbekistan 541 "On further improvement of the mechanism for assessing the environmental impact".

Public hearings meetings were held separately with the Bayavut Municipality and Shirin Town Municipality on the 24th of May 2022 which were attended by the concerned local authorities and community members.

A Stage III 'Statement on Environmental Consequence' is required to be submitted, and approved, prior to commencement of project operations.

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) – FOR LENDERS

An *Environmental and Social Impact Assessment Scoping Report* was completed in Q1 2022, to identify the likely risks and impacts of the Project, and inform the scope of the *Environmental and Social Impact Assessment (ESIA)*.

The ESIA has been undertaken to align with the applicable E&S policies and related standards of the international lenders², as well as Uzbekistan requirements. The objectives of the ESIA include, but are not limited to:

- Provide an overview of the Project design, identification of sensitive receptors in the Project's area of influence and assessment of Project alternatives including Best Available Technique (BAT);
- Assessment of baseline conditions (existing conditions) prior to the development of the Project through review of available data and conducting surveys;
- Assessment of the Project's environmental and social impacts for the construction and operational phases;
- Assessment of Gender Based Violence & Harassment (GBVH) including Sexual Exploitation and Abuse (SEA) risk and impacts during the construction and operational phases of the Project;
- Review of compliance obligations, including applicable Uzbekistan regulations and international regulations and standards as well as international lender requirements;
- To engage with key stakeholders and Project affected people to disclose Project information, study outcomes, gain lay knowledge about the local environmental and social context and seek feedback on Project;
- Determination of applicable mitigation and management measures including monitoring requirements to be implemented in order to avoid or minimise potential impacts and maximise potential environmental and social gains;

² 'Lender Requirements' includes: IFC Performance Standards (2012); World Bank Group General EHS Guidelines (2007), World Bank Group EHS Guidelines for Thermal Power Plants (Draft 2017), World Bank Group EHS Guidelines for Electric Power Transmission and Distribution (2007), Equator Principles IV (2020) – as a good practice); and the IFC & EBRD *Worker's Accommodation, Processes and Standards (2009)*; and ILO Conventions.

- Consideration of alternatives that can be used for the project leading to greater social and environmental gains; and
- Prepare a framework from which the construction, commissioning and operational phases respective environmental and social management systems and plans can be developed and implemented.

The ESIA has been divided into several volumes as follows:

- **Volume 1:** ESIA - Non-Technical Summary (this document);
- **Volume 2:** ESIA - Main Text;
- **Volume 3:** ESIA - Framework for Environmental & Social Management; and
- **Volume 4:** ESIA - Technical Appendices

1.3 Related Project Environmental & Social Documents

The Project's Environmental & Social documentation also includes the following, which have been prepared separate to the ESIA:

- Land Acquisition and Livelihood Restoration Plan (LALRP);
- Stakeholder Engagement Plan (SEP), inclusive of the Grievance Mechanism;
- Construction Environmental & Social Management Plan (CESMP); and
- Operational Environmental & Social Management Plan (OESMP).

1.3.1 Environmental & Social Due Diligence Assessment and ESAP

In addition to the above, an environmental & social advisor has been engaged on behalf of the lenders to undertake an Environmental & Social Due Diligence Assessment of the Project. An Environmental & Social Action Plan (ESAP) will be prepared alongside this assessment, which delineates required actions in order for the Project to maintain compliance with lender requirements throughout its lifetime. The ESAP will be committed under the financing agreements.

2 PROJECT SUMMARY

2.1 Key Project Information

Table 2-1 Key Project Information

PROJECT TITLE	Syrdarya CCGT Project
PROJECT DEVELOPERS	Consortium formed by following Companies: - Electricite de France S.A (EDF) - Nebras Power Investment Management B.V. - Sojitz Corporation - Kyuden International Corporation
PROJECT COMPANY	ENERSOK Foreign Enterprise Limited Company
OFF-TAKER	JSC National Electric Networks of Uzbekistan
GAS SUPPLY AGREEMENT	JSC Uztransgaz or any other supplier
EPC CONTRACTOR	Harbin Electric International Company (HEIC) Limited
O&M COMPANY	ENERSOK Foreign Enterprise Limited Company
E&S CONSULTANTS	5 Capitals Environmental and Management Consulting (5 Capitals) PO Box 119899, Dubai, UAE Tel: +971 (0) 4 343 5955, www.5capitals.com
	Juru Energy Consulting LLC Chust Str. 10, 100077, Tashkent, Uzbekistan Tel: +998 71 202 0440, Fax: +998 71 2020440

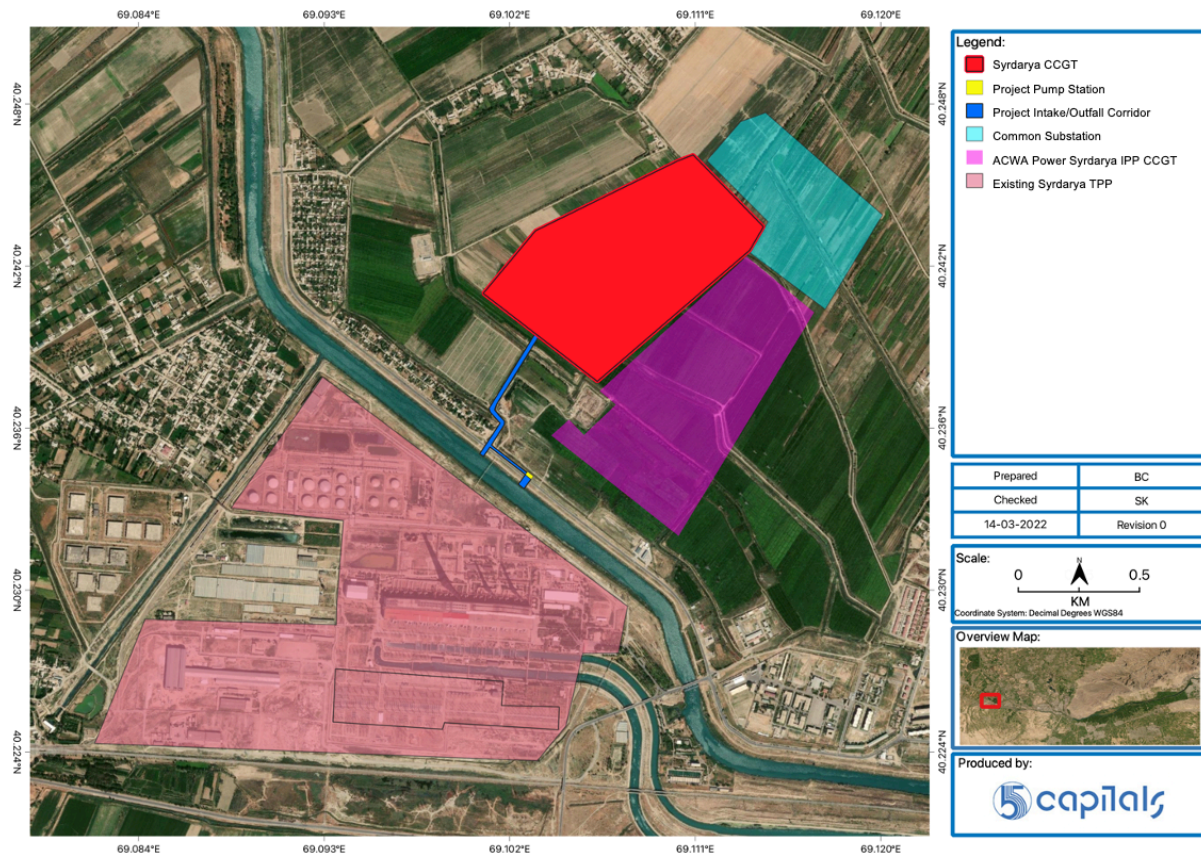
2.2 Project Location

The Project is located approximately 2 km northeast of the city of Shirin, which is a border town on the Uzbekistan side of the border from Tajikistan. The greenfield site is in close proximity to an existing 3,000MW oil/gas Thermal Power Plant (Syrdarya TPP), located close to the border with Tajikistan.

The Project will take water from the nearby Yuzhny-Golodnostepsky (YG) canal. The canal withdraws water from the Syrdarya river at the Bekabad hydro gauge. The wider Project area (in Uzbekistan) heavily depends on this canal (and others) for agricultural irrigation purposes through a network of irrigation channels that run along fields (above ground level). Other drainage ditches (below ground level) are also present between fields to collect runoff water and provide drainage to land.

The proposed Project location is as shown in the figure below.

Figure 2-1 Proposed Project Location



2.3 Land Ownership and Land Use

2.3.1 Land Ownership

According to the 1998 Land Code of the Republic of Uzbekistan, all land in Uzbekistan is State property and permits for use of land are granted and monitored by the State. However, the State permits private individuals such as farmers to lease certain land from the State for economic benefits and housing. The Project site is currently being used by such individual parties who have leased the land mainly for arable farming.

2.3.2 Existing Land Users

The proposed Project will be developed on a plot approximately 55 Ha. in area. At present, almost the entirety of the site is used for agricultural purposes. It is used mainly for cultivation of crops such as rice, wheat in addition to vegetables and fruits. In addition to the cultivated fields, a small patch of land to the eastern corner of the Project site contains fruit trees. Overall, fruit trees occupy a relatively small area of the Project. The types of trees includes cherries and plums as informed by a local farmer who has leased a portion of the land.

In addition to the primary use for arable crop cultivation, it has been identified from consultations (and observed on-site) that animal grazing activities are undertaken by community members outside of the crop growing season in agreement with the lease holders.

2.3.3 Project Land Lease

The Project Company will enter into a Land Lease Agreement (LLA) with the The Government of The Republic of Uzbekistan as represented by the Khokimiyat of Syrdarya Region which will allow the Project Company to use the land without any interruption from the Government or any person claiming land ownership. However, the current land users who are potential Project Affected Persons (PAP) will have to be compensated based on their type of use, which are discussed later in this ESIA report and in more detail in the Land Acquisition and Livelihood Restoration Plan (LALRP) which is a separate document.

2.4 Project Description Summary

The Project is a natural gas fired Combined Cycle Gas Turbine (CCGT) power plant (the Plant) with a net dependable power capacity of 1600 MW, that will operate independently and offload power to the grid via a shared electrical substation with the Syrdarya IPP CCGT project (by ACWA Power, currently under construction), located on adjacent land.

The main project facilities will include:

- Power block and stacks (main stack and bypass stack for each power block) including 2 * Gas Turbines (GT), 2 * Heat Recovery Steam Generators (HRSG) and 1 * Steam Turbine (ST);
- Closed Loop Cooling Water system and Open Loop Cooling System, with cooling tower blocks;
- Gas receiving terminal;
- Intake and outfall to the YG Canal;
- Raw water treatment plant;
- Wastewater treatment plants; and
- Ancillary/support facilities (i.e. access road, electrical system, site entrance and security building, laboratory, workshops etc).

Associated Facilities will be limited, as the Project benefits extensively from existing gas distribution station and transmission infrastructure nearby. However, the following additions will be required:

- A gas pipeline connection to the existing gas distribution station (approximately 950 m). As per the PPA, the responsibility for the construction of the dedicated fuel

pipeline spur will be that of NEGU (or its appointed contractor). Operation of the gas pipeline will be the responsibility of the supplier JSC Uztransgaz.

- An existing 500kV Overhead Transmission Line (OHTL) corridor runs through the approximate centre of the Project site and will be rerouted by NEGU, tentatively before mid-2023. The alignment of the re-routed OHTL that will bypass the Project site is considered an Associated Facility and is not finalised at the time of preparing this report. However, it is understood that the most likely option will be a route (2,440 m long) just outside and alongside the western boundary of the main Project site.

2.5 Project Alternatives

2.5.1 No Project Scenario

The government of the Republic of Uzbekistan through the Ministry of Energy aims to modernise and increase the electricity production in the country to foster economic growth and develop public-private partnership in the country's energy sector. The Syrdarya CCGT project forms part of the Ministry of Energy's plan to increase and modernise electricity production in the country.

The Syrdarya CCGT project also forms part of the Strategy of Action for the Five Priority Development Areas of Uzbekistan (2017 -2021) to introduce new technologies for generating thermal energy as the Project is being implemented as heat recovery in order to generate electricity.

Given the strategic need for the Project, the 'No Project' option is unlikely to be a reasonable alternative, as it would not align with the objectives of the Ministry of Energy and the objectives of the Strategy of Action for the Five Priority Development Areas of Uzbekistan (2017 -2021). This Project will prompt the closure of other less efficient plants. The No Project option would mean there is a higher chance that the existing Syrdarya TPP and other less efficient power plants will continue operational for longer periods with relatively lower efficiency in power generation resulting in higher use of fuel and greenhouse gas emissions for power generation to meet the local requirements.

2.5.2 Alternative Location

The current proposed site was pre-selected by the Government of Uzbekistan for the construction of the CCGT plant. The CCGT plant will be located not far from the existing Syrdarya TPP and adjacent to the ACWA Power CCGT project. In addition, there is existing infrastructure such as the gas pumping station and existing OHTL corridor as well as the YG canal as a source of water resource which will be crucial in the operation of the Project.

In addition, the Project with its current proposed location will also benefit from utilising the adjacent electrical substation which is being constructed as part of the ACWA Power project as a shared facility for offloading power to the national grid.

Using the current proposed site, also prevents the need to disturb any natural or critical habitats since the Project site comprises primarily modified habitat due to the extensive agricultural practices and activities.

2.5.3 Best Available Techniques (BAT)

BAT is a concept where the best available techniques (i.e. technology and operational practices) are adopted to prevent, or minimise emissions or impacts on the environment. The European Commission produces *Best Available Technique Reference Documents* (or BREF Notes) which contain BAT conclusions for specific industries and define emission limits, referred to as 'BAT AELs' (BAT Associated Emission Limits), as well as other performance criteria, such as efficiency.

As a good practice, the ESIA has undertaken an analysis of the Project against the BAT conclusions for Large Combustion Plants (LCPs), published in August 2017³, and the accompanying BREF document was published in December 2017⁴. The Project is considered to materially reflect BAT, given the particular location and characteristics. Key outcomes include:

- **Energy Efficiency:** The project will achieve a Net Electrical Efficiency of >60%; which is at the top end of BAT (54 – 60.5% for new CCGTs)
- **NOx Emissions:** The Project will comply with BAT-AELs for NOx throughout its operation. During combined-cycle operation; the design includes *Selective Catalytic Reduction* (SCR) and other techniques for reducing NOx emissions, to ensure compliance with BAT AELs.
- **CO Emissions:** The Project will comply with BAT-AELs for CO throughout its operation.
- **Water Reduction Measures:** The Project includes cooling towers and returns water to the YG canal following treatment to reduce losses.

³ Conclusions on Best Available Techniques (BATs) for Large Combustion Plants (LCPs), Commission Implementing Decision (EU) 2017/1442, 31 July 2017.

⁴ Joint Research Centre (JRC) Science for Policy Report, *Best Available Techniques (BAT) Reference Document for Large Combustion Plants*, EUR 28836 EN, December 2017.

2.6 Project Construction & Commissioning

Construction and commissioning will be the responsibility of Harbin Electric International Company (HEIC) Limited (the EPC Contractor). An EPC contract will be implemented that includes requirements related to environmental and social compliance. All temporary construction working areas and facilities will be located within the Project footprint. It is expected that the EPC Contractor will engage several Sub-Contractors and there will be a peak workforce of approximately 2,150 workers. Workers' accommodation for the EPC Contractor's construction staff will be provided within the Project site boundary at the south-eastern portion alongside and south of the proposed main internal access road. This will include living quarters as well as other amenities and welfare facilities such as sanitary facilities, canteen halls, sports pitches and other common areas. Alternate off-site workers' accommodation may also be required, for subcontractors that will be involved in Project construction.

2.7 Project Operations

The day-to-day operation of the Plant will be the responsibility of the Project Company, ENERSOK Foreign Enterprise Limited Liability Company as an owner-operator who has its registered office in Tashkent, Uzbekistan. The Project Company will enter into a 25-year PPA with the off-taker.

The Plant is designed to be fully automatically operated and will require minimum Operation Personnel intervention for normal operation, including start-up, shutdown and daily maintenance. It is designed to operate for approximately 6,700 hours annually.

The Project Company will put in place a Quality, Health, Safety and Environment (QHSE) integrated management system implementation with the objective of obtaining the triple certification of ISO 9001/ ISO 14001/ ISO 45001 Standards.

The operational workforce is expected to include approximately 67 people for the O&M Company. There is an intent to utilise local talent as much as possible, where skills exist to fill some of these roles.

2.8 Project Milestones

Based on the details provided by the Project developer Consortium, the following timeline is currently in place for the Project.

Table 2-2 Key Project Milestone/Timeline Dates

MILESTONES	DATE
Notice to Proceed (NTP)	Dec 2022 (To be confirmed)
Early COD 1	01.01.2025
Early COD 2	01.04.2025
Commercial Operation Date (COD)	31.12.2025

2.9 Decommissioning of the Plant

The Project Company has entered into a 25-year Power Purchase Agreement (PPA) with the off-taker/purchaser (i.e. JSC National Electric Grid of Uzbekistan [NEGU]). In accordance with the PPA, following the expiry date (or other termination date – which may also be extended) the Project Company shall have 24-months to complete the decommissioning processes, if the option for the purchase is not exercised by the off-taker, which would otherwise lead to a transfer of project assets at that time.

3 ESIA STAGE - STAKEHOLDER ENGAGEMENT

Stakeholders, in particular the farmers and neighbouring communities were made aware of the Project at the time of the stakeholder consultations conducted as part of the neighbouring ACWA Power CCGT project in 2020, with the Project being referred to as the 'IFC CCGT'. The publicly disclosed ACWA Power ESIA⁵ included cumulative impacts assessment in combination with the IFC Project (including showing maps of the proposed location of the proposed IFC project) and the outcomes of the assessment were disclosed during public meetings and leaflets at the time. Further stakeholder consultations were carried out during the ESIA stage of the Project.

Stakeholder identification and consultations for the Project have been conducted during the ESIA stage. Separate consultations related to livelihood restoration were also undertaken as part of the livelihood restoration planning process. The stakeholder identification process has identified impact-based, interest-based and decision-making stakeholders.

The methods used for the stakeholder engagement process included meetings, emails, telephone calls and letters with national, regional and local authorities. Public consultations and meetings were also held. A summary of the engagement processes is outlined below:

- Consultations via telephone with directly impacted farmers.
 - Consultations performed between February to June 2022.
- EIA Public Hearing Meeting - Bayavut District
 - 24th May 2022: This meeting was attended by 8 male community members in addition to members from the Project Company and Deputy Mayor of Bayavut District Municipality.
- EIA Public Hearing Meeting - Shirin Town
 - 24th May 2022: This meeting was attended by 14 community members which included one female in addition to the Mayor of Shirin Town.
- Public Disclosure Meetings with nearby community members held between 15th and 16th June 2022 as follows:
 - Meeting with 12 male members of Sarmich community – 15 June
 - Meeting with 7 female members of Sarmich community – 15 June
 - Meeting with 6 male members of Shirin community – 15 June

⁵ <https://www.ebrd.com/work-with-us/projects/psd/51963.html>

- Meeting with 6 female members of Sarmich community – 15 June
- Meeting with 5 male members of Djolangar community – 15 June
- Meeting with 4 female members of Djolangar community – 15 June
- Meeting at Shirin Town Municipality attended by 8 stakeholders – 16 June
- Meeting with 6 male members of Mirzo Ulugbek community – 16 June
- Meeting with 5 female members of Mirzo Ulugbek community – 16 June
- Meeting at Bayavut Municipality attended by 6 stakeholder – 16 June

Printed brochures highlighting the key Project features and potential environmental and social issues that may affect the host communities were distributed during the stakeholder consultation meetings.

Full details of the consultation process, minutes of meetings, numbers of individuals consulted, comments and pictures are provided in the SEP and respective appendices of this ESIA.

A community household socioeconomic survey was conducted as part of the ESIA baseline surveys during which time a general opinion on the Project were also sought from the households, including advising them of the availability of the Project ESIA stage grievance mechanism.

As part of the consultation process, consultation letters and emails were sent to the following Stakeholders:

- Ministry of Health of the Republic of Uzbekistan;
- Ministry of Tourism and Cultural Heritage of the Republic of Uzbekistan;
- Ministry of Energy of the Republic of Uzbekistan;
- Ministry of Water Resources of the Republic of Uzbekistan;
- State Committee for Ecology and Environmental Protection of the Republic of Uzbekistan;
- Bayavut Municipality, Agricultural Department;
- Bayavut Municipality, Irrigation Department;
- Shirin Town Municipality;
- Melioration Expedition of Syrdarya Region;
- Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan;
- Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan
- Uzbekistan Society for the Protection of Birds Representative of Bird Life International in Uzbekistan;
- Uztransgas; and
- Hududgaztaminot.

4 SUMMARY OF MAIN ENVIRONMENTAL & SOCIAL IMPACTS

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

4.1 Air Emissions and Ambient Air Quality

EXISTING SITUATION

The Project is located in a relatively rural area of Uzbekistan close to the border of Tajikistan which exhibits similar land use practices, primarily relating to arable agriculture. The surrounding area in Uzbekistan has a slightly more industrialised and commercial land use, which includes the city of Bekabad (approximately 12 km to the east of the Project site), as well as the nearby Syrdarya TPP. This industrial land use is also becoming more apparent with the construction of the ACWA Power Syrdarya IPP CCGT on adjacent land to the Project.

Overall there are few existing point source emissions locally, but this notably includes the TPP, which primarily emits a combination of NO₂, CO to the airshed due to the combustion of natural gas. In addition the TPP also combusts an amount of liquid fuel and will therefore also emit SO₂ and particulate emissions to the local airshed. It is possible that local farming practices may also contribute to local air quality impacts, including for Ammonia (NH₃) and fine particulates (such as PM_{2.5}), particularly where there is fertiliser application and poor manure management. Such impacts may be seasonal. There is a limited amount of transport in the area and as such an expected commensurate low-level of vehicle emissions to the airshed.

Several ambient air quality studies have been undertaken in recent years relating to the establishment of baseline conditions at the site and surrounding area (within Uzbekistan borders). This includes the following, which are either publicly available or have been made available for the project sponsors:

- Feasibility stage survey undertaken on behalf of the IFC (2019).
 - Data was collected for NO₂, SO & CO and showed compliance with all MPC levels for Uzbekistan.
- ACWA Power CCGT Ambient Air Quality Study (2020) – Data is presented in the publicly disclosed ESIA.
 - Data for NO₂ showed compliance with ambient standards for both Uzbekistan and when compared to the WHO ambient air quality guidelines of 40 µg/m³ at all the monitoring stations.

- Monitored concentrations of SO₂ were found to be also within the Uzbek (monthly-100, annual 50 µg/m³) and WHO standards (500 µg/m³) for all the monitoring stations.
- Uzhydromet (government monitoring data recorded from 1992 onwards) for Bekobod City and Gulistan.
 - The data presented in the disclosed ACWA Power Syrdarya IPP CCGT ESIA showed no exceedances recorded in Gulistan between 2015-2019 for the monthly and annual average results for all the monitored pollutants when compared to the respective MPC requirements. Note: Gulistan is considered to be similar in terms of land use and size to Shirin (town at the Project site), but without industry and hence is comparable for longer term data.
- 1-year data in the Project area undertaken by Mott MacDonald on behalf of IFC for the Syrdarya CCGT.
 - The recorded data at all monitoring stations typically shows compliance with applicable NO₂ ambient standards (for all time-averaging periods) except for a low number of exceedances against the stringent one-time Uzbekistan NO₂ standard from the continuous analysers.

Based on the available data outlined above, the airshed is considered to be non-degraded based on observed compliance with national (and WHO standards).

CONSTRUCTION PHASE IMPACTS

Project impacts to air quality are expected during the construction, commissioning and operational phases, and will be managed through mitigation, with on-going monitoring. The construction impacts will primarily include localised dust emissions and some gaseous emissions from construction vehicles and equipment. Some of these impacts may be discernible at local receptors, in proximity to the works, although many (particularly for dust) can be well managed via the implementation of good practice construction methods, which are included to the Construction Environmental & Social Management Plan (CESMP).

OPERATIONAL PHASE IMPACTS

Commissioning and operational impacts will primarily relate to the combustion of natural gas (the only fuel), which will result in the primary emission and dispersion of oxides of Nitrogen (NO & NO₂) and Carbon monoxide (CO) to the local airshed. The Project includes modern combustion technology including firing with Low NO_x burners, to ensure emission are reduced. Additional measures such as the use of Selective Catalytic Reduction (SCR) in combined cycle operations will further minimise NO_x emissions to ensure compliance with applicable emissions standards (Uzbekistan, WBG EHS Guidelines for Thermal Power Plants and as a good practice, the EU IED requirements as per the BREF BAT-AEL Conclusions for Large Combustion Facilities).

Operational impacts have been modelled using the US-EPA approved AERMOD 7 software for both simple and combined cycle modes on natural gas fuel considering 5-years of historical meteorological data.

The modelling has considered for the following scenarios:

- Scenario 1 - Project only (combined cycle)
- Scenario 2 - Project only (simple cycle)
- Scenario 3 - Cumulative including the ACWA Power Syrdarya IPP CCGT

All scenarios were combined with existing baseline concentrations which include contributions from the neighbouring Syrdarya TPP and other background pollutants from within the local airshed

The emissions dispersion model has been carried out for oxides of nitrogen (NO₂ and NO) and Carbon monoxide (CO) as these are the key pollutants emitted from combustion of natural gas that may potentially lead to exceedances of relevant standards. In addition, emission of Ammonia (NH₃) are also considered due to the emissions arising from the proposed SCR for the Project. Predicted concentrations have been compared with relevant standards and guidelines incorporated into applicable Uzbekistan law and also the WBG/IFC EHS Guidelines that reference the WHO ambient standards.

Project Combined Cycle Operations

For Combined Cycle operations the predicted long-term (i.e. annual average) NO₂ and NO contributions (incorporating background concentrations) at the sensitive locations total <50% of the applicable pollutant standards. Overall, emissions of NO₂, NO, CO and NH₃ on long-term ambient concentrations are predicted to be insignificant at receptors in accordance with the assessed significance criteria. As an example, the highest project NO₂ concentration contribution at the worst affected receptor is 1.5% of the annual average standards.

For short-term concentrations of NO₂ and NO, there are no exceedances of the relevant ambient air quality standards and the contributions are low at receptors. The highest NO₂ impact at the worst affected receptor is just below a 15µg/m³ contribution, which accounts for approximately 17% of the most stringent applicable NO₂ standard. When considering background concentrations, all predicted impacts remain under the applicable short-term standards.

There are predicted to be occasions where Project ambient contributions for 1-time average concentrations of NO₂ are >10% of the relevant standards (i.e. one-time Uzbekistan MPC) at six receptors. Although compliant with standards, this is considered as a potentially significant impact. However, these periods remain well below the 25% contribution of the standard for a single project (as allowable in line with the WBG/IFC EHS Guidelines for Thermal Power Plants)

and are not predicted to result in exceedances when incorporating background concentrations.

Predicted CO and NH₃ impacts at all receptors are negligible and assessed as insignificant under all averaging periods and when incorporating the background concentrations.

Project Simple Cycle Operations

Due to increased exit gas temperature and velocity, resulting in a more buoyant plume, simple cycle operations will have enhanced dispersion in all modelled scenarios versus combined cycle.

The predicted short-term NO₂ and NO project contributions are well below the relevant standards. The predicted NO₂, NO, CO and NH₃ PCs are also all below 10% of the relevant standards and therefore the impacts on short-term concentrations are all considered to be insignificant.

Cumulative Impacts of Project with the ACWA Power Syrdarya IPP CCGT

Scenario 3 modelled the emissions of both the Project in combination with the ACWA Power CCGT project and accounted for background ambient pollutant concentrations.

The predicted long-term NO₂ and NO contributions at the receptor locations are all modelled to be below the applicable standards. The worst affected receptors are modelled to receive up to a 1.2µg/m³ NO₂ contribution (accounting for 3% of the applicable standards).

The predicted short term NO₂ and NO concentrations are also all below the relevant standards. The worst affected receptor is modelled to receive up to a 32.2µg/m³ NO₂ contribution over the worst-case 1-time average period (accounting for 37.9% of the applicable standard). When combined with background concentrations this is predicted to be up to 77.2% of the short-term standard.

Whilst the hourly impacts of the Project and the ACWA Power Syrdarya IPP CCGT operating in combination are greater than 10% of the standards, the overall impacts remain well below the absolute standards such that it is considered extremely unlikely that the standards would ever be breached with the existing and expected emissions inputs to the airshed.

Further, the predicted 24-hour and monthly average NO₂ contributions are all below 10% of the relevant standards and are considered to be insignificant.

The predicted short-term NO, CO and NH₃ PCs are all below 10% of the relevant standards, therefore the impacts are considered to be insignificant.

4.2 Noise and Vibration

EXISTING SITUATION

Based upon observations made during site visits conducted for the ESIA, there are few sources of noise at or adjacent to the Project site that result in high amplitude noise. A key influence near the site is the intermittent noise from construction activities at the nearby ACWA Power Syrdarya IPP CCGT project where earthworks were observed to be on-going at the time of site visits.

Other discernible noise sources within a distance of 1-2 km from the site include the existing Syrdarya TPP (a continuous source of noise), a railway line to the south of the TPP and road to the north of the canal (both intermittent noises). It is noted that trains are infrequent, and there are approximately 4-10 road vehicle movements along the nearby road observed per minute during the daytime. Other noises may be generated periodically from nearby agricultural activity and use of vehicles on local roads/tracks.

Noise surveys were undertaken between 6th to 11th April 2022 at five (5) nearby receptor locations for 24-hour periods to establish a benchmark of the existing noise condition in the local area.

Recorded daytime noise levels were within the applicable Uzbekistan and WHO noise standards of 55dB(A) for daytime ambient noise at residential receptors (ranging from 47 – 53.2 dB(A)). Night time noise levels were recorded to exceed the applicable ambient noise standards of Uzbekistan and the WHO (both 45 dB(A)) at all monitoring locations (ranging from 47.1 to 56.3 dB(A)). This was observed to be primarily due to the natural soundscape at the location particularly in the evening and night, including insects and frogs (with fairly constant noise) and other animals such as dogs which are present locally. Some local human and vehicle noises were also observed. No major external anthropogenic noise sources including construction works at ACWA Power Syrdarya IPP CCGT project were observed during the night-time.

No noticeable vibrations were encountered at any time during the site visits or site survey undertaken to date. A specific vibration survey was not undertaken.

CONSTRUCTION PHASE IMPACTS

Construction activities are expected to result in temporary and short duration increases in the noise (and some vibration) levels at receptors emanating from activities at the Project site, access road and the temporary construction facilities; dependant on the type of works being undertaken.

Noise will be generated by construction and propagated to the surrounding areas via a range of processes. This has been assessed under guidance by BS 5228-1:2009 for the 'Code of

Practice for Noise and Vibration on Construction and Open Sites'. The assessment predicts a maximum increase of noise of up to 19.1dB(A) from the existing baseline at a small cluster of farm buildings in proximity of the western boundary of the Project (approximately 70m away). This is predicted to be experienced during earthworks and civil works, with other construction periods being quieter. The residential community of Sarmich (located 290m from the western project boundary) is also likely to experience an increase in noise of 6.9dB(A) throughout construction. All other existing receptor locations are predicted to have a construction phase noise impact <3dB(A).

Good practice construction phase mitigation and management measures have been stated in the ESIA (Volume 2) to ensure that noise (and vibration) impacts during construction are reduced where possible.

OPERATIONAL PHASE IMPACTS

The operation of the Plant is expected to result in a continuous low-level humming noise due constant and relatively stable operational processes that include rotating equipment, air intakes, cooling fans, emissions release and processes such as water treatment.

Noise modelling using proprietary software IMMI2021 has been conducted using design information to predict the potential noise egress from the proposed Project and its potential effect on receptors. Modelling scenarios include both simple and combined cycle operations for the Project as well as the cumulative impacts with the nearby ACWA Power Syrdarya IPP CCGT project (which is currently under construction).

Based on the model outcome, there are predicted to be noise levels both in compliance and exceeding noise standards at receptors. Noise impacts will be most significant at those receptors in closer proximity to the Project, as noise is attenuated with distance.

The nearest receptors to the Project include a farmhouse cluster approximately 70m from the western boundary of the Project and properties in the community of Sarmich further to the west (290m from the Project's western boundary). Noise at these receptors is modelled to exceed applicable night-time standards of 45dB(A) from the Project alone without including background noise levels. Noise levels at these locations are modelled to be marginally higher when incorporating the ACWA Power Syrdarya IPP CCGT.

When considering the cumulative impacts of the Project + ACWA Power Syrdarya IPP CCGT + background, there is predicted to be compliance against daytime noise standards at all receptor locations. As background noise levels already exceed the applicable noise standards during the night-time (mostly due to natural sounds), there is modelled to be exceedance of the 45dB(A) noise standard at receptors. In accordance with the WBG/IFC EHS Guidelines there is an allowance for a 3dB(A) change from the baseline conditions. The noise modelling study has predicted the excess noise values at receptors which are calculated

up to +3.7dB(A) during the night time at the nearby farmhouse cluster and nearest properties in the Sarmich community.

Based on the modelling outcomes there is predicted to be an exceedance of both the absolute noise standards and the allowable +3dB(A) excess during the night-time at certain nearby receptors. This will require mitigation to be implemented to reduce noise to allowable levels. At this stage the developer consortium has committed to developing mitigation measures to meet the allowable noise levels, however the specific methods for doing so are yet to be finalised.

The ESIA includes requirements to monitor noise requirements during both construction and operations, which will be particularly important to evaluate the performance of the operational mitigation (to be decided).

4.3 Water Resources and Water Environment

EXISTING SITUATION

The Project site is located close to Shirin town where the Dustlik and Yuzhny-Golodnostepsky (YG) canals separate from the Farhad derivation canal. The canals withdraw water from Syrdarya river several kilometres from Bekabad hydro gauge. The broader local and regional area heavily depends on the canals for irrigation purposes through a network of irrigation channels and pipes that run above ground between the agricultural fields. Drainage ditches are located between certain fields.

A water supply assessment report has been prepared by a consultant and provided to the sponsors. This report presents river and canal flow patterns, water levels, water temperature and flow velocities that are available between 1975-2018 from data recorded by the Uzhydromet water gauge station.

The canal already experiences certain impacts including from the once-through cooling water system of the Syrdarya TPP, with discharge upstream of the Project. The future ACWA Power Syrdarya IPP CCGT will have a discharge of treated sanitary wastewater only, which is expected to be minimal in volume. The Syrdarya River that feeds the canal is also widely reported to be the recipient of anthropogenic influences including discharge of sanitary wastewater, industrial discharges and runoff from agricultural fields.

The primary purpose of the canals is for irrigation, however, it is known from consultations that the canals are occasionally used for fishing by local populations (for subsistence purposes). For this reason the Syrdarya regional SCEEP has specified that the applicable water quality standards for the canal are designated as being for 'Fisheries' quality.

BASELINE STUDIES

Water and sediment samples were collected in April 2022 from the YG Canal at four (4) locations – one (1) each at the upstream and at the location of the outfall, and two (2) downstream of the canal for both physicochemical characteristics and canal ecology.

Canal Water Quality

The laboratory analysis results indicate exceedances of certain pollutants (mostly for heavy metals) when compared with the stringent standards applicable for ambient water as a resource for 'fisheries'.

Sediment Quality

Samples analysed from the canal bed indicate consistent exceedances of the national standards for sediment-based concentrations of Chromium, Lead, Nickel, Copper and Zinc. As inferred from the results of water quality testing along the same stretch of the YG canal, non-conformant concentrations of these heavy metal parameters could be attributable to the broad range of anthropogenic activities along developed sections of the riverine corridor spanning the YG canal and Syrdarya River.

Canal Ecology

An aquatic biological survey was conducted in the YG canal and included surveys of Phytoplankton, Periphyton, Zooplankton, Zoobenthos and Fish.

Based on the results of periphyton samples analysis, it is considered that the water quality in the surveyed part of the canal corresponds to moderately polluted waters. Ecological condition has been assessed as satisfactory the species diversity of zooplankton in the canal is poor with just five (5) species recorded. Phytoplankton was represented by freshwater and brackish-water algal forms. The zoobenthos of the canal at surveyed areas is characterised by a complex of freshwater and brackish-water species; however observed to be generally poor in terms of species diversity.

A total of 16 species of fish from 7 families were identified during the survey. One (1) Aral Spined Loach, *Sabanejewia aralensis* was observed which is one of the fish species listed in the Red Book of Uzbekistan. It is an endemic subspecies of *Sabanejewia aurata balcanica* (Karaman, 1922) but is not evaluated on the IUCN Red List.

Drainage Ditches - Surface Water Quality

Water samples were collected from two (2) drainage ditch locations to understand background conditions to benchmark for future comparison and to understand if there are any potential influences from farming activities in the water quality. Most analysis results were comparable to the Uzbekistan irrigation quality standards, but with exceedances of Arsenic

and Copper. While the reason for the exceedance of copper is not clear, arsenic could be present as a result of pesticide usage for farming.

CONSTRUCTION PHASE IMPACTS

Water will be primarily required during the construction (and commissioning, to a certain extent) for a variety of purposes which includes civil works, domestic use, dust suppression, and for hydro testing and steam cleaning (during commissioning). The main sources of water for construction under consideration include water to be sourced from the YG Canal, supply from the municipality, or supply from licensed water suppliers from neighbouring towns.

A large portion of the water used during commissioning will be for the testing of the pipes and tanks (hydro testing) and for the cleaning of the equipment (steam cleaning). Such wastewater is expected to contain oily/grease residues and perhaps concentrations of heavy metals. This wastewater will be temporarily collected onsite for treatment (including temporary onsite evaporation pond) and disposal as per applicable law.

As part of the construction activities the site will be graded for levelling to facilitate building of above-ground structures and foundations and utilities. This will result in closing of existing drainage ditches that exist within the Project site, as agreed with the government's Irrigation Department, who have instructed that these can be closed without affecting the neighbouring farms. One of the ditches to the south of the Project site will need to be retained and will require modification works to ensure its functionality and to avoid potential flooding in the area during storm events. Although unexpected, there is a possibility that these drainage ditches may be subject to pollutants arising from construction that run-off with stormwater.

Excavation of the canal banks for the intake and outfall construction will permanently alter a small areas of the banks of the canal, including the potential temporary loss of associated fauna and localised impacts on water chemistry associated with increases in suspended sediments, with secondary impacts to canal ecology. The implementation of silt curtains (and other good practices) will minimise the dispersion of sediment/silt. As per a communication received from the Basin Water Organisation of Syrdarya, a water protection zone of 150m is applicable from the edge of the canal. The EPC contractor should request for a permit from the organisation prior to commencing any construction activities within this sanitary protection zone.

OPERATIONAL IMPACTS

Water Availability and Project Water Requirements

The YG Canal is the only source of water that will be used during Project operations. It is estimated that the Plant will require approximately 1,381m³ of water every hour during normal operation with a peak demand of approximately 2,160m³/hr which is expected during summer months.

Based on the discharge rating analyses conducted as part of the modelling exercise, the output data indicates that the canal's flow rates at the outfall and intake location will be between 147m³/s and 303m³/s. Compared to the low flow rate of 147m³/s as a conservative approach, the demand of water for the Plant during normal and peak times are 0.3% and 0.4% of the canal flow which is considered minor. Moreover the Plant will discharge treated water back to the canal at an estimated rate of between 357m³/hr to 562m³/hr, largely depending on the climatic conditions at the time of the year.

Entrainment of Canal Aquatic Fauna

The Plant will draw water from the YG Canal for operational purposes. It is possible that water drawn in by the intake system may entrain a variety of organisms and fauna from the canal. This will largely be prevented via the implementation of mesh screens at the intake, however, some organisms will be small enough to pass these. Larger aquatic organisms that are drawn into the intake and are too large to pass through the debris screens may be impinged against the screens, this can lead to mortality to fauna. This will be reduced where possible by having an intake velocity of ≤ 0.15 m/s.

Impacts on Canal Water Quality

Following operational processes the Project will discharge treated effluent (monitored for quality) to the canal. This will include effluent with a thermal component and possibly with traces additives (e.g. residual chlorine, anti-scalents and biocides).

In order to assess the potential impacts upon the canal and to determine the extent of the mixing-zone of this effluent, a hydrodynamic, initial dilution and dispersion modelling study has been undertaken based on effluent quality specifications. The hydrodynamic and recirculation modelling was undertaken using TELEMAC-3D. Four (4) scenarios (related to operational discharge and canal flows) were selected in order to identify potential recirculation issues as well as to identify potential increased environmental impacts in the vicinity of the Project site. These were undertaken for temperature and also using a tracer to simulate the dispersion of a pollutant within the discharge.

Relating to the temperature model, the results indicated that an absolute difference in temperature of 3 °C occurs does not reach can reach up to 30 m. The distance at which an absolute difference in temperature of 0.1 °C occurs varies between 30 m to 125 m in the dispersion modelling.

Relating to the generic pollutant modelling, the distance at which an excess in a generic pollutant concentration of 2.5% occurs ranges between 40 m and 112 m in the dispersion modelling.

Based on the findings from the dispersion modelling study, which considers a conservative pollutant concentration of 100mg/l of a generic pollutant at the discharge point, the majority

of the dispersion occurs within a distance of 112m from the discharge location at the outfall which is considered the mixing zone for pollutants. There is an existing canal water abstraction station located approximately 30m from the outfall location in the downstream direction as discussed earlier in the baseline section and assessed in the construction phase impacts section above. However it is expected that this set up will be relocated after consultation with the Shirin Town Municipality prior to commencement of construction and therefore non-existent during the operation phase. It is therefore considered that there will be no users or human receptors of canal water within this short distance from the outfall location that may be affected.

Except for a single type of fish species which is listed in the Red list species of Uzbekistan, the YG canal is generally considered to be of low importance ecologically. Moreover, considering the rapid mixing of pollutants as a result of canal flow resulting in a very short mixing and rapid dilution as shown by the water quality modelling, magnitude of potential impacts on canal ecology and other human receptors will be minor.

Drainage of Stormwater Runoff

Rain water from the entire site including rain water from roofs and the paved areas of the plant will be collected by the plant storm water drainage system and discharged to the canal following a short retention time in a monitoring holding pit. Rainwater falling on surfaces which may be contaminated will be directed to the oil/rainwater separation plant, prior to discharge to the same monitoring pit. The separated oil component will be stored for collection by a licensed contractor (and likely recycling).

4.4 Climate Change

Uzbekistan is among the countries most vulnerable to climate change. Uzbekistan is expected to experience higher temperatures resulting from climate change. Already, measurements of seasonal temperatures by district show that the average annual temperature has increased in Uzbekistan by 0.29°C since 1951. Climate observations in Uzbekistan show that the number of days of high air temperature (>40°C) has increased from the 1950's to 2000s. The number of days with low temperature (below either -15°C or -20°C) has decreased.

The ESIA has reviewed the outputs from reputable climate models that predict (CIMP6 in the SSP 5 – 8.5 Scenario) the period 2080-2090 is estimated to entail a 22% increase in mean annual temperature and a 57% jump in the number of days with temperatures exceeding 45°C per year from the 1991-2020 baseline.

Besides rising temperatures, the period 1991 to 2020, has seen an overall reduction in precipitation at a rate of 1.22 mm per decade, with most reduction during the winter. Despite this, certain climate models are predicting an increase in rainfall in the long-term, however

other sources consider there to be water stresses due to reduced melt water from glaciers and snow.

PROJECT'S GREENHOUSE GAS EMISSIONS

Greenhouse gas emissions linked to the construction phase will primarily be generated by stationary combustion sources for electrical supply (e.g. temporary Diesel Generators) and site-based vehicles and other equipment powered by liquid fuel. These will be located around the site in EPC and sub-contractor administration & office areas, as well as being mobile in the site area, or for transportation to/from the site. Such equipment will be fuelled by either diesel or unleaded petrol. The expected amount of diesel consumption for the entire construction phase of the Project is expected to be approximately 1,700,000 litres with a total GHG emissions of approximately 4,591 tonnes CO₂eq. This is considered to be fairly typical from a major construction project similar to the Project.

The Project's primary greenhouse gas emissions source will be from the combustion of natural gas fuel, which will be on-going in large quantities for the duration of the Projects' lifespan. The predicted greenhouse gas emissions during the different years of the operational phase are as shown in the table below.

Table 4-1 GHG Emissions During the Operational Phase of the Project

YEAR	POWER YIELDS	GREENHOUSE GAS EMISSION (TONNES CO ₂ EQ)	CARBON INTENSITY (KG CO ₂ EQ/ MWH)
2025	914,873	469,089.14	512.7
2026	11,941,186	3,987,960.97	334.0
2027	11,912,615	3,990,884.21	335.0
2028	11,945,331	4,006,342.95	335.4
2029	11,709,070	3,933,193.29	335.9
2030	11,885,943	3,996,303.65	336.2
2031	12,120,228	4,077,870.85	336.5
2032	11,742,086	3,953,445.72	336.7
2033	11,472,063	3,865,008.56	336.9
2034	12,148,800	4,050,456.46	333.4
2035	12,120,228	4,047,796.64	334.0
2036	11,890,656	3,986,684.19	335.3
2037	11,709,070	3,933,685.43	336.0
2038	12,120,228	4,076,064.78	336.3
2039	12,120,228	4,079,307.27	336.6
2040	11,393,771	3,837,908.78	336.8
2041	11,737,373	3,955,688.77	337.0
2042	12,120,228	4,042,856.76	333.6
2043	12,120,228	4,047,191.82	333.9
2044	11,741,503	3,936,880.65	335.3

2045	11,885,943	3,994,377.98	336.1
2046	12,120,228	4,078,029.91	336.5
2047	12,091,657	4,071,880.54	336.8
2048	12,124,911	4,085,810.13	337.0
2049	12,091,657	4,077,079.95	337.2
2050	12,148,800	4,098,621.24	337.4
Total		100,680,420.64	

The ESIA has considered certain technology alternatives for emissions reductions, however the CCGT plant is considered to be one of the most fuel-efficient technologies for thermal power generation.

The ESIA has also assessed the climate physical risk and climate transition risk relating to vulnerability of the Project to climate change. The Project is expected to operate for 25 years (as per the PPA) and the Client has advised that changes in water levels are not expected to pose a challenge in water availability, which are understood to be guaranteed by the government operators of the canal who will maintain sufficient canal flows. Project transition risks are unlikely to be an issue as the Project forms part of the government's power generation strategy alongside other widespread renewables development.

4.5 Terrestrial Ecology

With reference to the IFC PS 6 Habitat Classification, the Project site can be broadly classified as "Modified Habitat" due to the extensive agricultural practices and activities. A significant part of the land is used for growing rice, wheat, cotton, clover, barley and other crops. In addition, in the fields there are areas with artificial plantings of fruit trees, which include mulberry, apple, jida, poplar and willow grapes. The Project site is also used for cattle grazing (cows) by the community under agreement with land lessors when crops are not being grown.

There are no designated or other protected areas at the Project site or in its immediate vicinity. The nearest designated ecological site is an IBA approximately 20km from the Project site in Tajikistan. Impacts on this IBA are not expected, which is designated for its mountain range habitat, which is extremely different to the habitat at the site. Other IBAs are primarily designed for their lakes attracting wading birds which are not expected at or near to the Project site.

In order to understand the baseline biodiversity of the Project site and along the YG Canal banks, biodiversity walkover surveys were conducted during three seasons at the land allocated for the Project and its immediate surroundings. The primary purpose of the surveys were to identify the fauna and flora species within the Project site, this included avifauna, mammals, amphibians, reptiles and bats.

In terms of fauna, the only species of national conservation concern (Uzbekistan Red book) were sightings of White Storks and Glossy Ibis. All fauna observations were of international conservation concern (IUCN) Least Concern (LC). Bat surveys were also conducted, but no roosts were located from visual observations or recordings using ultrasonic identification.

A total of 51 plant species were recorded during the field surveys, none of them are nationally or globally threatened.

Construction works will result in minimal loss of natural habitat in the Project footprint which is used for agricultural purposes. Impacts during construction may result in the disturbance and direct mortality of fauna due to the removal of all the vegetation and use of heavy plant. Given that this is a modified habitat (agricultural land), these impacts are expected to be minimal. Such impacts can potentially be mitigated by implementing good practice construction techniques at the site.

The operational phase is expected to result in few direct impacts to terrestrial ecology at or around the Project site which will be fenced and along the routing areas of associated facilities. There is a possibility for electrocution and Collision of birds including from the re-routed OHTL (responsibility of the offtaker). Good practice mitigation will be implemented by the Project teams to reduce such instances. Lighting and noise from the Project may result in some external impacts that may deter some fauna from the immediate surrounding area, however, existing agricultural practices are also likely providing a deterrent.

No exotic or alien plant species will be used in the landscaping of the site and any unused areas with soil covering will be allowed to restore naturally. The use of herbicides will not be permitted on the Project site.

4.6 Soil, Geology and Groundwater

Top soil samples at seven locations within the Project site were collected by a certified laboratory and analysed to provide a benchmark of soil quality. Four samples were taken within the main Project footprint and three samples were taken along the intake/outfall pipeline corridor. Analytical results for tested samples indicate all soil quality parameters are generally within local and international limits, with the exception of five heavy metal parameters. Measured concentrations of Chromium, Nickel, Copper and Zinc for all seven samples were found to be in excess of national threshold values but well below Dutch threshold (intervention) values. The presence of such metals at all locations may mean that these are naturally occurring metals in this area. Considering existing and historical land-use within the study area, elevated levels of Arsenic may be attributable to the long-term application as pesticides for agricultural purposes.

Groundwater samples were also collected from existing boreholes along the western boundary of Project site. Sulphates in both wells were above the UZ State Standard 950:2011 norms and so was chlorides at one of the wells. When compared to the Dutch groundwater intervention values, all the heavy metals were below the established limits. The elevated sulphates were also recorded in the previous ESIA undertaken for the adjacent ACWA Power Syrdarya IPP CCGT.

The construction works have potential to affect soil quality and potentially impact groundwater quality prior to mitigation. In such cases, the impacts will be limited to isolated areas and there is a limited potential for widespread soil pollution. Such potential impacts may result from spills and leaks of hazardous liquids and materials, inadequate waste & wastewater management, which will be managed through the Project specific CESMP.

Identified impacts on groundwater during construction also include potential changes in groundwater level and even localized flooding as a result of the closing of the existing irrigation ditches within the Project site. This is because the irrigation drainage ditches help to control the groundwater level considering the low soil permeability as a result of the subsurface silty soil in the area.

During the operational phase, potential risks to soil & groundwater will be managed and mitigated via the design of effective materials and waste storage areas. The Plant will be designed with dedicated areas for storage of potential sources of contaminants such as fuel and chemicals. Secondary containment bunds and separate drainage systems with collection sumps will be in place to collect spilled materials without causing risk of pollution to the environment. In addition, the trained Project workforce will implement effective processes for handling hazardous materials and waste.

Such impacts are typical for both construction, commissioning and operation and can be readily managed by the effective implementation of the CESMP and OESMP respectively (and related management plans/procedures). An Emergency Preparedness & Response Plan (EPRP) will also be prepared by the EPC Contractor and Operator respectively to ensure that in the unlikely event of a significant spill, any affected area can be isolated and restored effectively without delay.

4.7 Solid Waste and Wastewater Management

CONSTRUCTION PHASE

Solid Waste

The Project will generate elements of waste during all phases. A large amount of waste is expected to be generated during construction and will include various items of packaging and waste construction materials (amongst many other types). Most of this will be non-

hazardous and can be easily managed via typical good practices, including segregation for re-use and/or recycling (where feasible). Hazardous wastes will likely be generated in much smaller quantities and will include: used fuel containers, spent paint cans, lubricant cans and oil cans, vehicle/plant maintenance wastes. These hazardous waste materials will need to be temporarily stored inside impermeable bunded areas (with other controls) in accordance with the mitigation and management measures stated in the ESIA. Specific and careful waste management practices by licensed contractors (at licensed facilities) will need to be ensured and monitored by the Project parties to avoid environmental or human exposure to such wastes.

Wastewater

Sanitary wastewater generated during construction will be stored in septic tanks prior to removal by a licensed wastewater contractor for treatment. The commissioning phase activities (including hydrotesting, steam blowing and chemical cleaning) will generate other streams of wastewater that may contain a small number of residues (e.g. heavy metals, oils and greases, acid cleaning water). No discharge of construction or commissioning wastewater to the YG canal is expected besides an amount of groundwater dewatering effluent during earth and foundation works.

OPERATIONAL PHASE

Solid Waste

During operations, there will be relatively small quantities of solid waste arising from planned maintenance works, administration facilities and activities of the employees which are not directly associated with the power generation processes. Waste segregation for re-use or recycling of solid wastes will be undertaken where practical. Hazardous wastes such as wastewater treatment sludge, used filters mediums, used chemicals etc. will be generated in small volumes but on an on-going basis during operations. These hazardous waste materials will be temporarily stored inside impermeable bunded areas (or sumps) in accordance with the design and stated mitigation & management measures in the ESIA before being transported to hazardous waste management facilities in the Syrdarya region.

Wastewater

The Project design incorporates several wastewater treatment plants to ensure that wastewater generated on-site is subject to appropriate treatment prior to re-use or discharge to the YG Canal. This includes treatment plants for oily, industrial & process, sanitary and stormwater treatment.

Sanitary wastewater will be collected and treated in a dedicated sanitary treatment plant on-site where the effluent will be either used for irrigation or discharged into the canal via the

outfall after treatment. Clean stormwater runoff will also be discharged to the canal via the outfall, alongside treated stormwater from potentially oily areas of the site.

Discharges

As outlined in the earlier section on the 'Water Environment' the Project will discharge thermal and treated effluents to the YG Canal. The total treated process water that will be discharged to the YG canal is estimated to be about 360 m³/hr during normal operation and an estimate volume of 560 m³/hr during peak period which is expected to be during summer months.

The SanPin No. 0202-06 serve as general guidelines for the protection of water quality of receiving water bodies, nevertheless, definitive regulatory thresholds enforced by the State Committee for Ecology and Environmental Protection (SCEEP) differ for various categories of industrial facilities. Exhaustive and project-specific wastewater discharge standards are procedurally set out in the round of environmental assessment leading up to project commissioning (i.e., stage III national EIA). Hence, the project design is, in its current form, set to meet binding requirements of the IFC thermal power plant effluent guidelines, pending the issuance of applicable national standards, in the final stage of the national EIA process. At the latter stage, project design will demonstrate compliance with contextual regulatory discharge standards.

4.8 Archaeology and Cultural Heritage

Site visits and consultations undertaken to date confirm that there are no surface features of potential archaeological importance identified within the Project footprint. It is also expected that the existing agricultural activities would have already exposed any near surface archaeology if it had been present. Consultations to date have not identified any other forms of intangible heritage on the land or in the immediate Project vicinity.

Albeit a very low risk, the potential for encountering buried archaeological remains or artefacts during excavation and earthworks activities cannot be completely ruled out, and as such the ESIA sets out that a 'Chance Finds Procedure' shall be prepared to establish appropriate management protocols in the unlikely event of uncovering any archaeological or cultural finds.

Consultations with the Ministry of Culture of the Republic of Uzbekistan revealed that there are 2 monumental art cultural objects in Shirin town and 3 monumental art cultural objects and 1 archaeological site in Bayavut. It is important to outline, that all above-mentioned objects are located far from the Project area.

During the operational phase of the project, there will be no further excavations at the Project sites so there is no risk of uncovering any further historical finds at that stage. There are also no expected impacts to other tangible or intangible cultural assets and heritage.

4.9 Landscape and Visual Amenity

Based on site observations and the review of satellite imagery, the wider Project area is relatively rural but is unique in that there are overshadowing industrial structures within the landscape (i.e. the existing Syrdarya TPP - especially the tall stacks and transmission infrastructure) and the on-going construction works at the ACWA Power Syrdarya IPP CCGT project; which will further change the landscape character.

The three stack structures of the existing TPP tower above the landscape and can be seen from many kilometres as vertical intrusions to the viewshed (including from Tajikistan). Other taller structure such as the power blocks and associated OHTLs are also visible. In addition, the OHTLs run to the north from the TPP in two primary corridors, including one of these through the proposed Project site.

Other land in the area is dominated by a patchwork of fields intersected by trees, hedges and drainage ditches. Relatively dense community residential clusters are present, but are small and distributed within the landscape.

The development of the Project will include the construction of buildings and stacks which will take place steadily over the construction period and transform this area of the landscape resulting in major land use changes. With the on-going construction work at the ACWA Power Syrdarya IPP CCGT, this will lead to further development and landscape change, which will represent a cumulative impact to both landscape character and visual amenity. Those receptors mostly affected by the visual impacts will be those that have direct (and partial) views across the existing site, this primarily includes those farmhouses that are located in proximity to the western boundary of the site (i.e. 70m from the Project boundary).

Currently, views over the Project area are limited (to an extent) by the presence of hedgerows and trees, which will remain in place around certain residences. Therefore, it will be the above ground features of the proposed CCGT that will be mostly in view (e.g. stack structures and taller elements of the power block).

Differences at night-time will also be discernible where lighting is required for Project operations, however, mitigation measures have been included in the ESIA to limit these effects.

During colder and drier periods, there may also be a visual impact linked to steam plumes from the cooling towers, which will tend to rise vertically from the cooling blocks.

4.10 Socioeconomics

A socioeconomic household survey (of 251 households and 1,285 residents, 72% female) was conducted in May 2022 in the districts of Bayut, Havos and Shirin Town. The survey was focused on residential communities based within a three-kilometre radius of the Project area. The

surveys have been undertaken to establish/determine the socioeconomic profile of the communities living near the project, as well as to understand access to existing public facilities. Full details of the survey outcomes are included to the ESIA.

Construction of the Project will lead to lease termination for farmers who have previously leased the agricultural land where the Project will be located which could lead to loss of income where livelihood restoration processes are not effectively implemented. This will be managed through the implementation of a Project specific Livelihood Restoration Plan (LRP-ongoing) in alignment with the Land Acquisition and Livelihood Restoration Plan (LALRP).

Further to the existing lease holders, it is understood that certain community members graze cattle on the Project land (under agreement with lease holders) when crops are not being grown. In order to account for such informal land users a Community Development Plan will be developed in tandem with the development goals for the local area.

Operations of the Project will be instrumental in contributing to the power development strategy in Uzbekistan by providing additional, more stable, power generation capacity, which will give rise to various socio-economic benefits and will be a key driver to the modernisation of the power sector in Uzbekistan. In addition, the Project will provide various positive socio-economic benefits such as direct employment creation (mainly during construction and to a lesser extent during operations), which will further stimulate the local economy via the multiplier effect. In addition, to the direct monetary impact of employment created during construction, there also exists the potential for the Project to promote the dissemination of construction skills from expatriate workers into the local labour force.

4.11 Community Health, Safety and Security

All construction Projects have potential risks relating to public safety that could arise, particularly in regard to the use of high-powered equipment, heavy construction plant, excavations, transportation amongst others, including fire and pollution releases. Public risks during construction have the potential to result in isolated incidents, which could be of a devastating magnitude to a person or group of people in the wrong place at the wrong time. Risks that could be experienced include worker influx and disease (such as COVID-19, HIV AIDS) Gender Based Violence and Harassment (GBVH), Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) and transportation impacts, as traffic will increase on public roads to deliver materials and equipment to the Project site in order to manage traffic related impacts (including safety risks to other road users). The Project will develop a Worker Influx Management Plan to manage the potential risks associated with worker influx in the Project area.

The EPC Contractor and Operator will prepare a SEA & SH Prevention and Response Action Plan which will put protocols and mechanisms in place to address the risks of SEA/SH and how

to address any allegations that may arise. Other plans during construction phase that manage potential community impacts include a 'Traffic Management Plan', 'Security Plan' and an Emergency Preparedness and Response Plan'.

Furthermore, security staff will be on-site during both the operation and construction phase. Security arrangements will be guided by UN Code of Conducts for law enforcement officials and the IFC's Good Practice Handbook on the Use of Security Forces: Assessing and Managing Risks and Impacts IFC's and the UN Basic Principles on the use of Force and Firearms by law enforcement officials (if armed).

Processes for a third-party grievance mechanism have been established in the standalone Stakeholder Engagement Plan (SEP) for public and other stakeholder complaints, which will be managed by the Project Company.

4.12 Human Rights

As a member of the United Nations, Uzbekistan supports and implements all the main international instruments of the United Nations relating to the protection of human rights and freedoms, including UN Universal Declaration of Human Rights, Human Rights Council Resolution No. 30/15 on human rights and preventing and countering violent extremism, Convention on the Elimination of all Forms of Discrimination against Women among others.

Under the UN Human Rights Guiding principles, the majority of Project related risks will be managed in accordance with labour and working conditions, avoidance of forced and child labour, whilst also non-discriminating and providing equal opportunities for employment. Such instances pose risks will need to be managed under mitigation and management controls set out in the 'Labour and Working Conditions' Section of the ESIA.

Health and safety risks to the site workforce will be managed effectively through specific risk assessments, development of appropriate method statements and procedures, emergency and disaster planning and the communication of specific health and safety planning requirements and training sessions.

The working conditions and labour accommodation will comply with Uzbekistan laws as well as ILO requirements and UN conventions to which Uzbekistan is signatory to. The EPC Contractor labour camp will be located on the Project site. The requirements will additionally be met in regard to working conditions of site workforce and such conditions will be managed through effective Project planning, and the implementation of a grievance mechanism to ensure that workers can openly air their complaints or anonymously, without fear of being dismissed, should they consider conditions to be unsafe or culturally damaging or in instances where they experience Gender Based Violence & Harassment (GBVH). The Project will also develop and implement a Human Resources Policy and related procedures.

Indigenous people (or groups) have not been identified in the Project area and as such, provisions for safeguards for such people have not been considered. Other impacts to communities will be managed as set out above and as per the 'Community, Health, Safety and Security' section of the ESIA.

4.13 Impacts from Unplanned Events

Accidental impacts are considered as those impacts that occur due to unplanned events, mishaps or failures during any stage of the Project (construction, commissioning, operation etc., examples of which include, but are not limited to spills and leaks, uncontrolled emissions and discharges, fire and explosions. Potential impacts from unplanned events assessed in the ESIA includes air quality impacts from fire incidents during construction as well as impacts related to major spill events and road accidents that can cause serious environmental pollution, injuries to human beings and fauna and damages to physical assets. Unplanned events during operation may be related to accidental release of toxic materials such as Ammonia and natural gas, as well as fire and explosion that could have detrimental impacts on the nearby communities and operational workers.

4.14 Cumulative Impacts

The assessment of cumulative impacts with reference to this Project relates to cumulative impacts upon specific receptors as a result of the proposed project and existing impacts from other local facilities (as captured as part of the baseline – i.e. Syrdarya TPP). In addition, the ACWA Power Syrdarya IPP CCGT being constructed on adjacent land has also been included to this assessment in the ESIA.

4.15 Transboundary Impacts

The Project is located approximately 1.6km from the Tajikistan Border, and as such, the Environmental and Social Impact Assessment has had to carefully consider the range of impacts, and determine whether transboundary impact will occur. This has included modelling for air quality and noise impacts, as well as considerations of impacts where the Project's area of influence may extend into Tajikistan.

The only foreseeable transboundary impacts may relate to ambient air quality, as most other impacts do not extend over the border. With specific regard to air quality, the modelling of impacts from the Project will not result in significant ambient air quality impacts across Uzbekistan's borders. This has been demonstrated by numerical modelling following Good Industry International Practice. Modelling results predict that in the worst-case simulation

(against five-year meteorological data), impacts from the Project will not result in significant residual ambient air quality impacts across Uzbekistan's borders.

Separately, the cumulative impact on global climate from the Project's foreseeable operational GHG inventories could be less significant relative to that of a no-project scenario, considering other less efficient carbon-intensive thermal power facilities.

With regards to adverse contingencies posed by the Project's construction, operational and decommissioning activities, the ESIA study has not identified any risks liable to culminate in trans-boundary E&S impacts. Upon the finalization of detailed project design and construction schedule, the EPC Contractor will undertake a Hazard and Operability Analysis (HAZOP) to capture and pre-empt any emergent risks with a trans-boundary area of influence; however, these are not expected.

It is noted that water impacts (such as use of water from the YG Canal) are only applicable to Uzbekistan (and not Tajikistan) due to the water from this canal only being available for users in Uzbekistan.

In conclusion, the Project will not result in any significant transboundary environmental impacts and will not trigger ESPOO Convention Criteria.

5 STAKEHOLDER ENGAGEMENT & GRIEVANCE MECHANISM

Note: Refer to Section 3 for ESIA stage stakeholder engagement.

5.1 On-going Engagement

A separate Project specific Stakeholder Engagement Plan (SEP) has been prepared, which sets out the strategy and plan in regard to engagement with local communities and other interested groups (collectively known as stakeholders) during the pre-construction, construction, commissioning and operational phases. A key purpose of the SEP is to specify the methods to efficiently manage and facilitate future engagements with stakeholders through various stages of the Project lifecycle.

This SEP has been prepared to align with applicable requirements of the IFC Performance Standards, with particular relevance to IFC Performance Standard 1 on “Assessment and Management of Environmental and Social Risks and Impacts”; which describes the stakeholder’s engagement requirements in more depth.

The SEP prepared for the Project has identified both impacted, interested and decision-making parties. The SEP details specific actions to be taken in regard to engaging with identified stakeholders at different stages of the Project, including those considered vulnerable. The methods proposed have been optimised for the specific stakeholders to ensure inclusivity and engagement in a culturally appropriate manner.

5.2 Grievance Mechanism

5.2.1 ESIA Stage Grievance Mechanism

An ESIA stage grievance mechanism was developed and implemented to receive feedback and complaints from stakeholders potentially impacted by the development of the Project. The following approach was used in the establishment of the Project specific grievance mechanism.

- Applications/complaints from local individuals or groups were accepted both in written and verbal forms after conducting the meeting with affected community.
- 5 Capitals as well as local consultant Juru Energy have reviewed and responded submitted grievances in co-ordination with the Sponsors.

Contact details were disseminated to project stakeholders during consultations and other meetings and surveys as part of efforts to establish communication channels feeding into the

Grievance Redress Mechanism (GRM) developed for the ESIA stage. For reference, the general process and timeline related to grievance management is outlined in the table below.

Table 5-1 Grievance Mechanism Process and Timeline

STAGE	TIMELINE
Grievance Received/Submitted	-
Grievance logged and acknowledged	Within 7 working days of grievance being submitted
Grievance investigated	Within 14 working days of grievance being submitted*
Proposed resolution conveyed to grievant	Within 14 working days of grievance being submitted
If applicable following dissatisfaction of resolution by Grievant	
Actions to re-assess grievance/propose new solution/inform Grievant of final decision	Within 14 working days of notification of dissatisfaction by Grievant
In the event that a grievance cannot be resolved between the two parties a mediator will be involved i.e. local leaders who understand the culture and practices within the Project site.	Within 14 working days of notification of dissatisfaction by the Grievant.
Grievances that are not resolved at the project level - a grievance committee involving senior management from the Sponsors/Project Company, municipality and any other relevant authorities (if required).	Within 30 working days of notification of dissatisfaction by the Grievant.

* Where complex grievances, or other factors are extending the investigation time, the Grievant will be informed of this delay and advised of an updated expected timeline for response.

5.2.2 Project Grievance Mechanism

The SEP includes the detailed grievance mechanism, which will be available to both Project workers and external parties separately. The grievance mechanism will be available to receive complaints or other concerns/comments and can be accessed for free, with no retribution to users. Grievances will be able to be submitted via a sealed grievance box at the main Project site entrance, via telephone to a specified number, via post or email and directly received by competent project personnel. Site security personnel at entrance gates will be trained to advise on and direct grievances appropriately.

If necessary, methods have been inbuilt to retain the anonymity of the aggrieved. The responsibility and accountability of the external grievance mechanism remains with the Project Company, but may need to be supported by the EPC Contractor (as applicable). The worker grievance mechanism will be managed by the EPC Contractor, but overseen by the Project Company.

The ESIA, LALRP and SEP documents will be disclosed to identified stakeholders in person and will also be made available at locations in the Project area in both English and Russian (the ESIA Vol 1 NTS will also be available in Uzbek language), as well as for download on lenders websites.

6 ENVIRONMENTAL & SOCIAL MANAGEMENT & MONITORING

The Project Company (ENERSOK) will establish a Project Implementation Team (PIT) to oversee the development and construction works. As the Project owner, permit holder and recipient of finance, ENERSOK will have overall accountability of E&S compliance and risk management, however, the responsibility for day-to-day E&S compliance and management will be under the contractual responsibility of the EPC Contractor. Once the Project is operational, responsibility for operations and maintenance activities including E&S compliance and E&S risk management will be the responsibility of ENERSOK directly (as the Owner and Operator).

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

The Framework is intended to outline systematic structures and management programmes that will comprise the respective construction, commissioning and operational phase Environmental and Social Management Systems (ESMS).

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

6.1 Independent Auditing and Monitoring

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