Bash 500MW & Bash 52MW Wind Farms

Republic of Uzbekistan

Environmental and Social Impact Assessment (ESIA)

Volume 1 - Non-Technical Summary

Prepared for:

December 2023

Document Information

Project Name	Bash 500MW Wind Farm & Bash 52MW Wind Farm
5Cs Project Number	1305/001/100 (Bash 500MW WF) 1305/001/145 (Bash 52MW WF)
Document Title	Environmental and Social Impact Assessment (ESIA) Report: Volume 1 – Non-Technical Summary
Client	ACWA Power
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Document Control

Version	Date	Description	Author	Reviewer	Approver
1.0	17/12/2021	ESIA-NTS	EMO/EFO	MKB/KRW	KRW
1.1	11/01/2022	Update based on ACWA Power's comments	EFO	MKB	KRW
1.2	26/04/2022	Update based on comments received from EBRD/RINA & ADB	SB/EFO/EMO	MKB	KRW
1.3	19/05/2022	Update based on comments received from EBRD	EFO/EMO	KRW/MKB	KRW
1.4	04/10/2022	Update based on comments received from ADB	EFO/EMO	KRW/MKB	KRW
1.5	08/11/2023	Updating the Bash 500MW NTS to include details about the Bash 52MW WF	EMO	KRW/MKB	KRW
1.6	08/12/2023	Update based on LEA's Comments	EMO	BK	KRW

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CONTENTS

LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
ADB	Asian Development Bank
CESMP	Construction Environmental & Social Management Plan
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
ESIA	Environmental & Social Impact Assessment
GBVH	Gender Based Violence & Harassment
IFC	International Finance Corporation
NEGU	National Grid of Uzbekistan
OESMP	Operational Environmental & Social Management Plan
OHTL	Overhead Transmission Line
PCFM	Post Construction Fatality Monitoring Plan
RAP	Resettlement Action Plan
SEP	Stakeholder Engagement Plan
5 Capitals	5 Capitals Environmental and Management Consultancy

1 INTRODUCTION

1.1 The Projects

1.1.1 Bash 500MW Wind Farm

The government of the Republic of Uzbekistan through the Ministry of Energy aims to increase the electricity production in the country from 12.9GW in 2019 to 29.3GW by 2030 in order to foster economic growth as part of the Uzbekistan 2030 Energy Strategy. One of the objectives of the Energy Strategy include the development and expansion of renewables use and their integration into the unified power system. In regard to the development of wind farms the Energy Strategy states the following as priority:

"Creation of large-scale wind farms with single site capacities ranging from 100MW to 500MW mostly concentrated in North-Western region (Republic of Karakalpakstan and Navoi region) shall be the main priority of wind power development"

The Bash 500MW Wind Farm aligns with the above statement and the 2030 Energy Strategy. The 500MW Wind Farm in Bash (herein after referred to as 'the Project') will be developed on a plot of land in Gijduvon District by ACWA Power through a Project Company 'FE ACWA Power Bash Wind LLC' registered in the Republic of Uzbekistan with registration number 839862. The Project will also include the development of a 162km single circuit 500kV Overhead Transmission Line (OHTL). ACWA Power Bash Wind LLC has entered into a 25-year Power Purchase Agreement (PPA) with JSC 'National Electric Grids of Uzbekistan.

1.1.2 Bash 52MW Wind Farm

The MOE and ACWA Power signed a terms of agreement in January 2023 to develop a green hydrogen facility in Tashkent1. In order to meet the power demand for the hydrogen plant, ACWA Power will develop a 52MW WF (with a maximum capacity of 80MW) in Bukhara region. The Bash 52MW WF will be located in the same Project boundary as the Bash 500MW WF.

In addition, it will be developed and operated through a joint consortium between ACWA Power and "Uzkimyosanoat" with a shareholding of 80% and 20% respectively for both the

[1] The hydrogen plant will be an integrated facility and will be connected to an existing ammonia plant in Chirchiq which is an industrial complex located approximately 45km from Tashkent. It is noted that a separate SEP has been prepared for the hydrogen plant.

hydrogen plant and the Wind Farm. The two Projects (WF & hydrogen plant) will be under the 'ACWA Power UKS Green H2' Project Company with the registration number 2050941.

The Project scope will include the development financing, construction, operation and maintenance of the Wind Farm including an auxiliary power building, step up transformer from 33kV and internal access roads.

1.2 Scope of this NTS

This Non-Technical Summary (NTS) of the Bash 500MW WF ESIA and the Bash 52MW WF Addendum provides a description of the Bash 500MW & Bash 52MW WFs "the Projects" and the anticipated impacts (both positive and negative) associated with their construction, commissioning, operation and decommissioning phases. It also describes the design process taken to prevent impacts and the mitigation and management measures identified to minimise or manage negative impacts and where possible to enhance beneficial impacts.

1.3 Projects Financing

It is understood that ACWA Power are seeking projects finance from the following main lenders:

Bash 500MW WF

- European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy (2019) and Performance Requirements.
- Asian Development Bank (ADB).
- EPFI's who require compliance with IFC PS and World Bank EHS guidelines.

Bash 52MW WF

- European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy (2019) and Performance Requirements.

Additionally, ACWA Power implements the E&S requirements of IFC as a minimum on all its projects and as such, the two Bash WFs will also be required to adhere to IFC Performance Standards and IFC EHS Guidelines. As such, the Projects have certain obligations to ensure relevant processes are in place for stakeholder engagement on an on-going basis in accordance with EBRD E&S Policy and Performance Requirements, ADB Safeguard Requirements and that of the EP's, IFC Performance Standards and applicable World Bank Group Environmental, Health & Safety (EHS) Guidelines.

1.4 Public Disclosure Requirements

1.4.1 Bash 500MW WF

The 60 day EBRD disclosure period and 120 day ADB disclosure period for the Bash 500MW WF have been completed and the ESIA packages can be found through the links provided in the table below. In addition, an ESIA Consultation & Disclosure Report was prepared at the end of the ESIA disclosure period (also available via the links below).

Table 1-1 Website Links to Disclosed Bash 500MW WF ESIA Documents

ENTITY	WEBSITE
EBRD	https://www.ebrd.com/work-with-us/projects/esia/uzbekistan-bash-wpp.html
ADB	https://www.adb.org/projects/documents/uzb-56085-001-esia
ACWA Power	https://acwapower.com/en/projects/bash-wind-ipp/

1.4.2 Bash 52MW WF

The Bash 52MW WF is categorised as Category A and will hence require 60 days of public disclosure in accordance with EBRD requirements. At the end of 60 days EBRD disclosure period, a public consultation and disclosure report will be developed based on additional consultation and feedback undertaken during the disclosure period. This feedback report will then be disclosed on ACWA Power's website together with the ESIA package explaining the disclosure activities that have been undertaken, feedback received and whether/how these are addressed in the final ESIA and management plans.

1.5 Background and Rationale

1.5.1 National EIA (OVOS)

The Bash 500MW EIA was approved by the State Committee on Ecology and Environmental Protection (SCEEP) now Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC) on 30th September 2021.

In order to determine the national EIA requirements for the Bash 52MW WF, a meeting was held with MEEPCC on 2nd February 2023. This was in consideration that the proposed Bash 52MW WF is located within the same boundary as the Bash 500MW. The outcome of the meeting is as summarised below:

- The MEEPCC required the Bash 500MW National EIA to be updated to include the details and assessments of the proposed Bash 52MW WF Project.
- The updated EIA must include details of the turbine specifications and justification of why the 8 WTGS are required.

- The Projects must submit the Collison Risk Modelling Reports for both the Bash 52MW and Bash 500MW as part of the resubmission package.

Based on the above, the Bash 500MW WF EIA was updated to include the details of Bash 52MW WF and resubmitted to MEEPCC for review and approval. The updated national EIA was approved in August 2023.

Note: *The Projects are not required to undertake the Stage 2 National EIA process 'Statement of the Environmental Impact (SEI)' but they will be required to submit the National EIA stage 3 'Statement on Environmental Consequences (SEC)' before the start of the operational phase.*

1.5.2 Lenders' ESIA

Bash 500MW WF

The Bash 500MW WF ESIA package was approved by the lenders in October 2022. The related documents have also been disclosed in the websites provided in table 1-1 above.

Bash 52MW WF

The approach to the Bash 52MW WF ESIA was determined during a meeting held between EBRD, ACWA Power and 5 Capitals on 19th August 2023. The outcome of the meeting is as summarised below:

- An ESIA addendum (to the existing Bash 500MW WF ESIA) will be prepared for the Bash 52MW WF in order to provide Project specific information, assess Project specific impacts and the cumulative impacts of both Bash 500MW & Bash 52MW WFs (this document).
  - This will also include the updating of the Bash 500MW WF Non-Technical Summary, Framework for Environmental & Social Management, Stakeholder Engagement Plan and the Resettlement Action Plan.
- An update of the existing Bash 500MW WF management plans would be undertaken in order to include the requirements for the Bash 52MW WF including any additional mitigations required as a result of the ESIA Addendum assessments.
- ACWA Power (and its Project Companies under Bash WFs) will be required to align with all the mitigations, management, monitoring and reporting requirements identified in the Bash 500MW WF and the associated management plans. This is in addition to any additional requirements identified in the ESIA Addendum as a result of cumulative impact assessment and outcome of stakeholder consultations.
- EBRD confirmed that the Bash 52MW WF is categorised as a Category A Project whose ESIA package will require to be publicly disclosed for a period of 60 days.

Objectives of the Bash 500MW ESIA & Bash 52MW ESIA Addendum

The key objectives of the Bash 500MW ESIA and the Bash 52MW WF Addendum included the following:

- To provide an overview of the Projects' design, identification of sensitive receptors in the Projects' area of influence and assessment of Projects alternatives
- Assessment of baseline conditions prior to the development of the Projects through review of available data and conducting surveys;
- Assessment of the Projects' environmental & social impacts for the construction and operational phases;
- To review of compliance obligations, including applicable Uzbekistan regulations and international regulations & standards as well as international lender requirements;
- To engage with key stakeholders and Projects affected people to disclose Project information, study outcomes, gain lay knowledge about the local environmental & social context, seek feedback on proposal and to understand & map any resettlement requirements.
- 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;
- Consideration of design alternatives that can reduce impacts and/or provide greater social and environmental gains.
- To prepare an Environmental & Social Framework from which the construction phase and operational phase respective environmental & social management systems and plans can be developed and implemented.
- Assessment of cumulative impacts based on the development of the Bash 500MW and Bash 52MW WFs within the same boundary.

The ESIA package has been divided into several volumes as follows:

- **Volume 1**: Bash 500MW & Bash 52MW WFs ESIA Non-Technical Summary;
- **Volume 2**: ESIA Main Text, Tables, Figures and Plates;
  - Bash 52MW WF ESIA Addendum to the Bash 500MW WF ESIA
- **Volume 3**: Bash 500MW & Bash 52MW WFs ESIA Framework for Environmental & Social Management; and
- **Volume 4**: ESIA Technical Appendices (for both Projects)

1.6 Related Project Environmental & Social Documents

The Project's Environmental & Social documentation also includes the following:

- Bash 500MW & Bash 52MW WFs Stakeholder Engagement Plan (SEP), Including Grievance Mechanism; and
- Resettlement Action Plan (RAP).
  - Bash 52MW WF Project RAP Addendum.

1.7 Key Projects Information

Table 1-2 Key Projects Information

Projects Title	Bash 500MW Wind Farm	Bash 52MW Wind Farm (with a maximum capacity of 80MW)
Projects Developer	ACWA Power	ACWA Power (80%) UKS (20%)
Project Company	FE "ACWA Power Bash Wind" LLC	ACWA Power UKS Green H2
Off-taker	JSC National Electric Grid of Uzbekistan	
EPC Contractors	China Energy International Group Co (CEEC)	HDEC (China Power)
O&M Company	First National Operation and Maintenance Co. Ltd (NOMAC)	
Environmental Consultant	5 Capitals Environmental and Management Consulting (5 Capitals) PO Box 119899, Dubai, UAE Tel: +971 (0) 4 343 5955, Fax: +971 (0) 4 343 9366 www.5capitals.com	
	Juru Energy Consulting LLC Chust Str. 10, 100077, Tashkent, Uzbekistan Tel: +998 71 202 0440, Fax: +998 71 2020440	
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2 PROJECTS SUMMARY

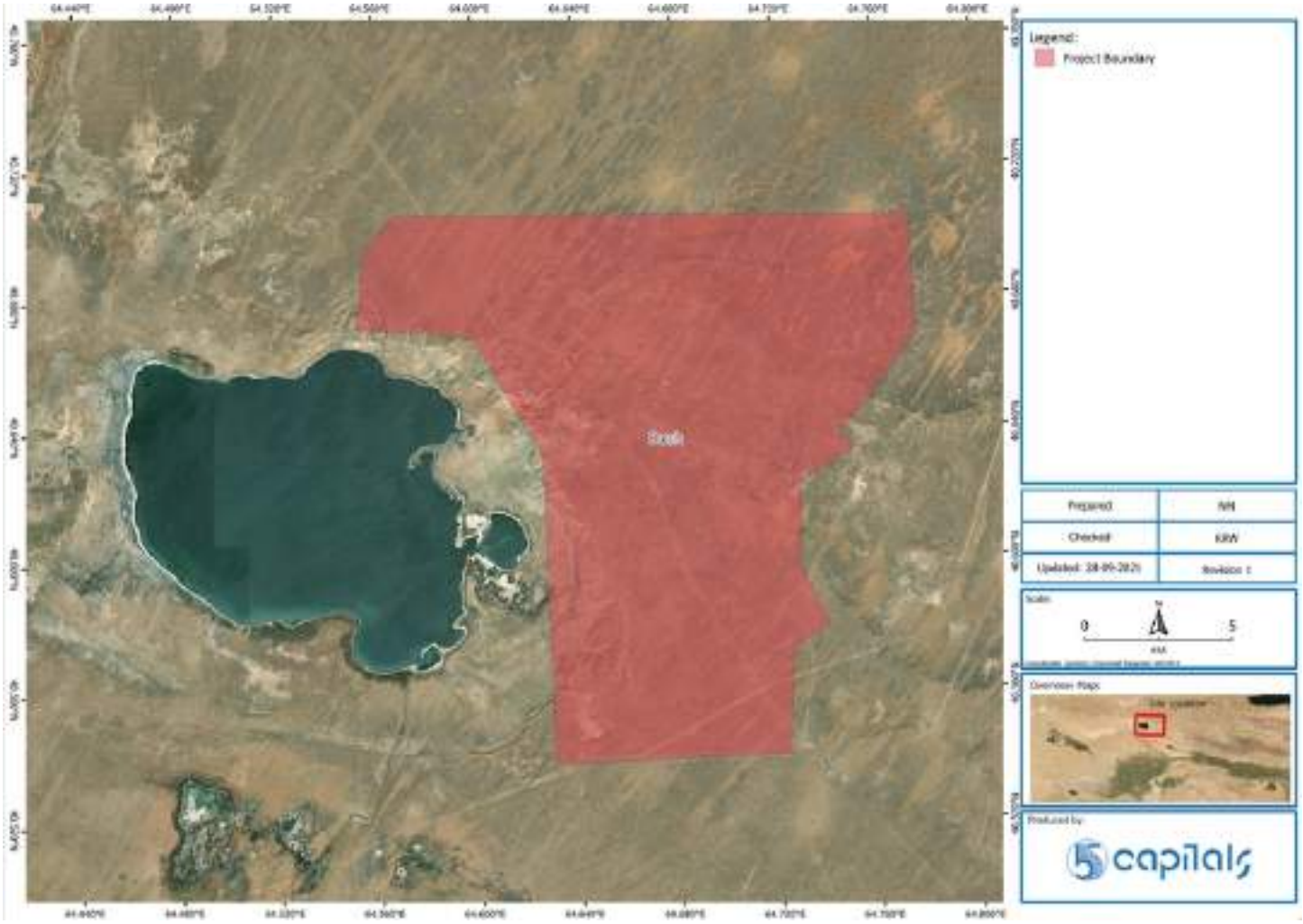
2.1 Projects Location

2.1.1 Wind Farms

The Bash 500MW and Bash 52MW Wind Farm Projects will be located on land allocated by the Ministry of Energy to the east and north-east of Lake Ayakagitma (reservoir) in Gijduvan district of Bukhara region. The site boundary is approximately 0.5km east of Lake Ayakagitma at its closest point. The proposed Projects location is provided in the figure below.

The wind turbines will be sited within the allocated land where the wind resource is most reliable but the siting has also taken account of environmental and social issues which are described in this NTS, to ensure that impacts are prevented, minimised or mitigated in accordance with Uzbekistan laws and environmental standards and the E&S policies and safeguards of the international banks funding the projects.

Figure 2-1 Projects Location – Local Context



2.1.2 Overhead Transmission Line

A 162km single circuit 50kV OHTL will run from the Bash 500MW Wind Farm substation to the existing Karakul substation located south of the Bash Wind Farm site. The OHTL will be developed as part of the Project by the FE "ACWA Power Bash Wind" LLC and the alignment is presented in the figure below.

The alignment of the OHTL has been modified following a review of ecology baseline data to avoid habitats that are most sensitive and to minimise impacts on migrating birds, most notably large birds of prey such as eagles and buzzards and other species that occur or breed within the area.

Figure 2-2 Alignment of 162km OHTL from the Bash Wind Farm to Karakul Substation

Note: *Bash 52MW WF will include an auxiliary power building and set up transformer from 33kV required before interconnection to the Bash 500MW WF switching station and AIS. As such, no OHTL will be constructed under the Bash 52MW WF.*

CONSTRUCTION PHASE OHTL

The Bash 500MW EPC Contractor (CEEC) has also constructed an OHTL with a total length of 31.63km with a rating of 5kV. This OHTL was constructed to supply electricity to the base camps, batching plant and the water pump (refer to Bash 52MW ESIA Addendum for more details). It is understood from ACWA Power that this OHTL will not be extended because of the Bash 52mW WF as its temporary facilities are close to an existing line.

2.2 Projects Description Summary

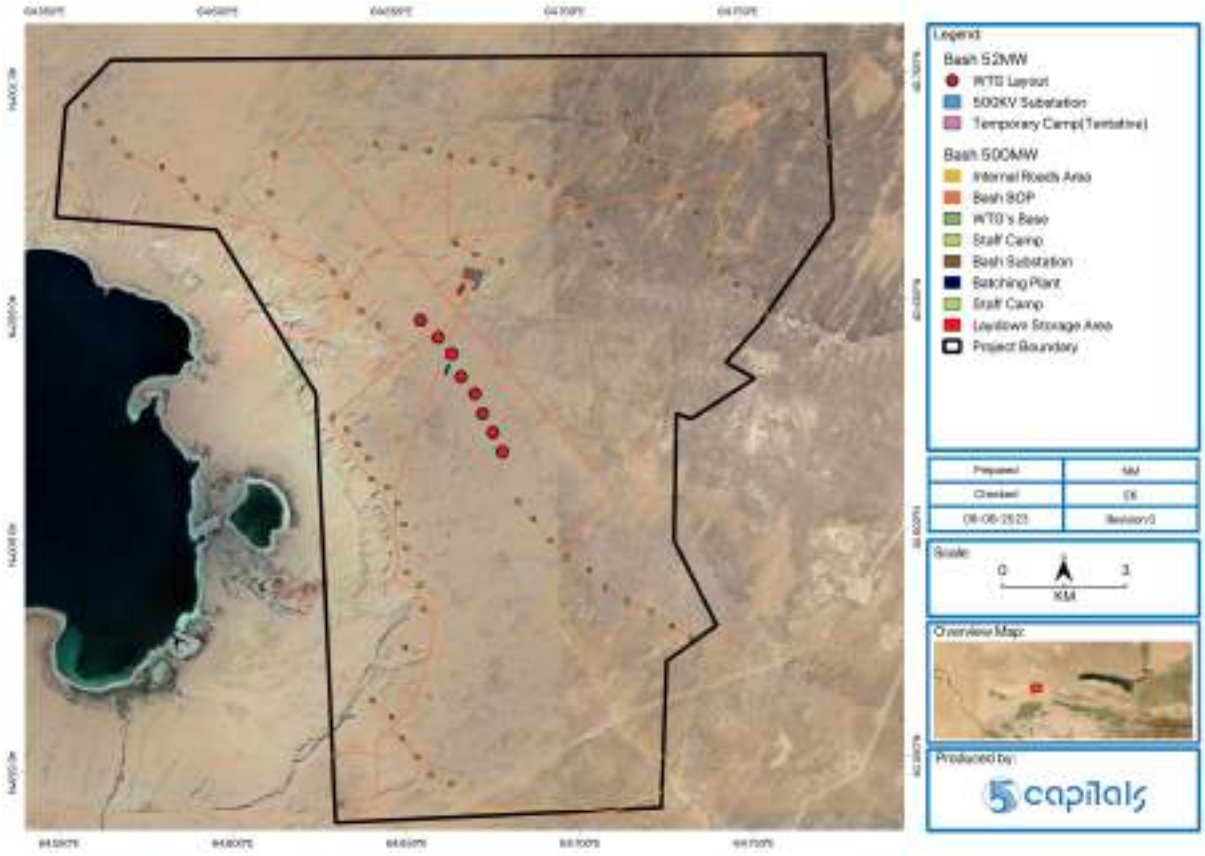
2.2.1 Wind Farms

The Bash 500MW and 52MW Wind Farms final configuration will comprise 79 and 8 Wind Turbine Generators (WTGs) respectively. The WTGs will be 6.5MW each, based on Envision "EN 171" specification. The WTG configuration

The Bash 500MW WF layout previously comprised 111 WTGs (November 2021) and this was reduced by 32 units during the design review to reduce environmental and social impacts, particularly on sensitive habitats and migrating /nesting birds of prey including the IUCN critically endangered Egyptian Vulture. Further measures to reduce impacts on birds has included micro siting of WTGs to ensure a minimum distance of 2km between Lake Ayakagitma and a 750m buffer between active bird nests (principally Egyptian Vulture) and the construction areas.

In addition, the Bash 52MW WF WTGs have been sited with the consideration of all the ecological buffer zones established under the Bash 500MW WF (refer to chapter 4 of more details).

Figure 2-3 Bash 52MW and Bash 500MW WTG Layout



The wind turbine chosen for the Projects will have a hub height of 100m and a rotor diameter of 171m and adopts variable speed control, variable pitch control and advanced control strategies. The variable speed control is adopted when the wind speed is below the rated value, variable-pitch control is adopted when the wind speed is above the rated value, and advanced control strategies are adopted to reduce WTG load and increase power generation. This flexible and advanced control mechanisms also allow for short term temporary stopping of the wind turbine rotation when birds such as the Egyptian Vulture are approaching the danger zone and can be quickly restarted when the birds are at a safe distance.

Compared with existing direct drive wind turbines in the current international market, the direct drive chosen for these wind farms have a higher generator efficiency and wide speed (7.1rpm to 9.94rpm). The pitch system adopts the inner ring HVSM gear pitch scheme which has high control accuracy and high bearing capacity. The pitch system also pitch system employs brushless AC motor and uses ultra-capacitor as standby power supply, achieving a longer service life and less maintenance.

The main Wind Farms components and facilities will include:

- Turbine Blades, generator, generator rotor, generator stator, nacelle, brake system, yaw system, tower, converter system, transformer for grid connection.

- Ancillary/support facilities: security building, administration building, offices and amenities, warehouse and stores, lighting, security, central control room, etc.
- Internal access roads between turbines: To enable easy access and transportation of project components within the site
- External access road: To enable access to the Project site from Highway A379

The Bash 500MW WF will also include the following components:

- 33/500kV sub-station: To be developed at the centre of the Project with an approximate area of 204,860m^2.
- Electrical connection facilities comprising a 500kV switchyard and the 33/500kV substation that will enable connection of the Wind Power Plant to the single circuit 500kV OHTL (see details below).
    - The Bash 52MW WF will include an auxiliary power building and set up transformer from 33kV required before interconnection to the Bash 500MW switching station and AIS.
    - Bash 52MW WF Associated Facilities

BASH 52MW WF ASSOCIATED FACILITIES

The Bash 52MW WF will be constructed within the same boundary as the Bash 500MW WF. In addition, it will connect to the Bash 500MW WF sub-station before connecting to the grid through the Bash – Karakul 162km Overhead Transmission Line (OHTL). These associated facilities are also being developed by ACWA Power and they have an approved lenders' ESIA in place. The approved ESIA can be accessed through the links provided in the table 1-1 above.

2.2.2 OHTL

In order to enable connection of the Bash Wind Farm to the grid, the Project will connect to a 162km single circuit 500kV OHTL that will run from the Bash wind farm (the 500kV substation) to the Karakul substation. The switchyards will be designed to accommodate planned interconnections from Navoi-Muruntau LILO and the line from Sarymay to Dzhankeldy.

The design of the OHTL will include bird protection features, most notably anti-electrocution design features to avoid mortality of raptors resting on the lines and towers.

Power generated by the wind farms will be exported to the National Electric Grid Uzbekistan (NEGU) via the plant electrical interconnection facilities/500kV Air Insulated Substation (AIS).

It is understood from ACWA Power that the Bash 500kV pooling switch sub-station will be operated by both the FE "ACWA Power Dzhankeldy Wind" LLC and FE "ACWA Power Bash Wind" LLC. This is because the 128.5km single circuit OHTL that will run from Dzhankeldy project site approximately 94km west of the site (subject of a separate ESIA) will connect to the Bash 500kV pooling switch sub-station.

To allow independent project implementation, the substation at Bash Wind Farm will be equipped with section disconnector that will be connected after commissioning both Wind Farms.

Associated Facilities[2] of the OHTL include:

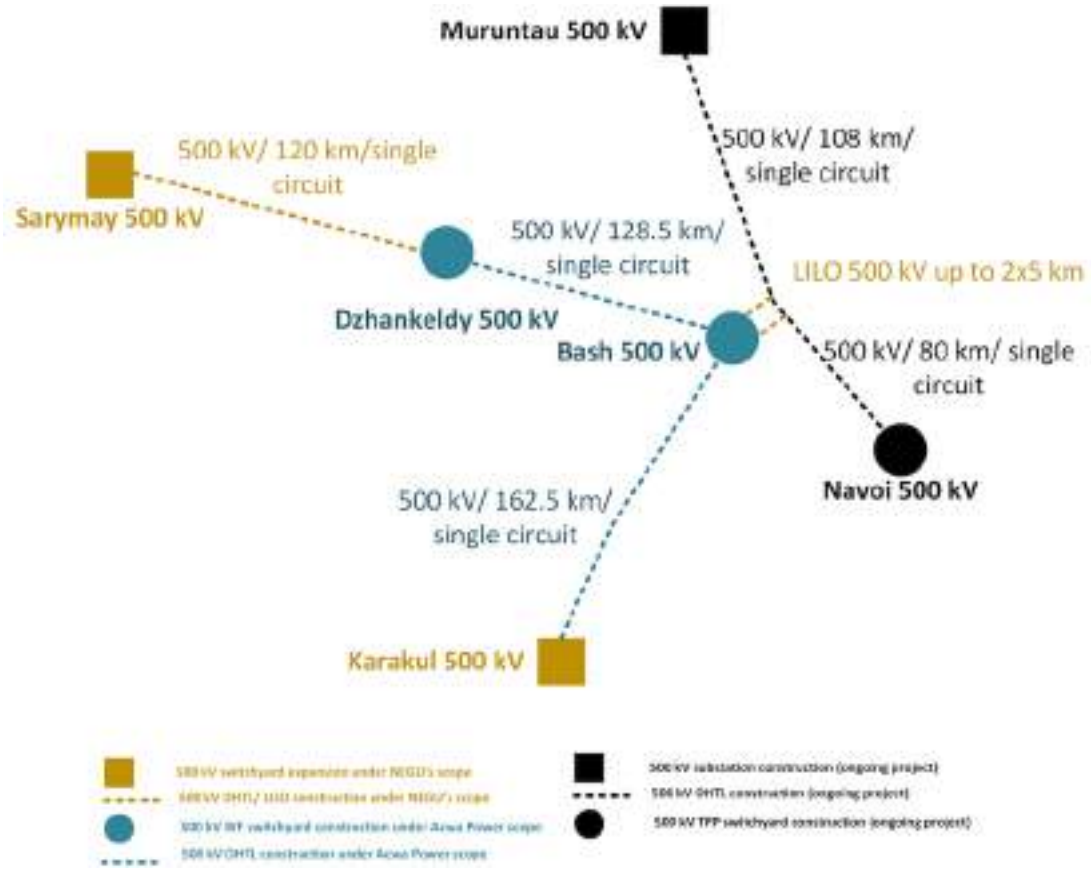
- A 500kV single circuit OHTL from Dzhankeldy to Sarymay: This OHTL will be approximately 120km and will also include the expansion of the existing 500kV Sarymay substation
- 500kV LILO to Navoi – Murantau: The LILO will be up to 2X5km. This will connect to the:
  - 500kV single circuit 108km OHTL to Murantau 500kV sub-station and
  - 500kV single circuit 80km OHTL to Navoi 500kV TPP switchyard
- The expansion of the existing Qurako'l 500kV sub-station

The National Grid of Uzbekistan (NEGU) will be responsible for the construction and operation of the above-mentioned OHTL associated facilities. During a meeting held between Ministry of Energy (MoE), NEGU, ACWA Power & Juru Energy, NEGU stated they will follow official procedure with banks such as EBRD for securing funds and ensuring timely implementation of Sarymay – Dzhankeldy 500kV OHTL and Sarymay 500kV switchyard commissioning in line with planned Dzhankeldy WF (subject of a separate ESIA) Early Commercial Operation Date (ECOD). It is noted that NEGU also stated that they have started discussions with EBRD on the financing of this alignment.

The figure below shows the Grid Interconnection Option to accommodate planned interconnections from Navoi-Muruntau LILO and the line from Sarymay to Dzhankeldy.

[2] Associated Facilities (in this case the OHTLs and substations) are necessary for the Bash Wind Farm to operate and transmit the generated power to the National Grid of Uzbekistan for required distribution.

Figure 2-4 Grid Interconnection Option for 1GW ACWA Power Wind Farms (Dzhankeldy & Bash)



Source: Selection of Interconnection Option

Note: *The length of the OHTLs shown in the figure above have since been revised. The figure is included to illustrate the interconnectedness between the Bash and Dzhankeldy Projects and their associated facilities.*

2.3 Projects Companies

It is understood from ACWA Power that the Bash 500MW WF Project Company (FE "ACWA Power Bash Wind" LLC) and Bash 52MW WF Project Company (ACWA Power UKS Green H2) will share the same Environmental and Social teams. This team will be responsible for ensuring that the Projects are aligned with the national and lenders E&S requirements.

2.4 Construction Requirements

The construction phase of the Bash 500MW WF commenced at the start of the Full Notice to Proceed (FNTP) in December 2022. As such, construction activities at the Project site are currently on-going including the implementation of the relevant environmental & social management plans. The construction of Bash 52MW WF is expected to begin in March 2024

with the issuance of the Notice to Proceed to the EPC (refer to section 2.6 for more details on the timelines).

The construction works (including the on-going works under Bash 500MW) will include transportation of wind farm components to the site, site preparation, land clearance at tower footprint & OHTL right of way for Bash 500MW, transportation of OHTL components and construction of platforms for pylons/tower, etc.

A concrete batching plant has been constructed as part of the on-going construction works under Bash 500MW WF. This is located to the south west of the sub-station approximately 270m north east of the railway line. The location of the batching plant ensures a distance of over 500m from the worker accommodation camp and from nearby local communities in order to mitigate against potential impacts. This batching plant will be used by both Projects.

All temporary construction working areas and facilities will be located within the Projects footprint including the lead engineering contractor's accommodation facilities. Any temporary construction laydown area established along the Bash 500MW WF OHTL right of way, will be for the storage of OHTL materials such as pre-assembled tower sub-structures, for the further assembly of these sub-structures into final tower structures, for storage of foundation reinforcement steel or steel tower metal bars, tools & equipment to be used by the Bash 500MW EPC contractor as well as sub-contractors responsible for OHTL construction.

2.4.1 Workforce Requirements

BASH 500MW WF

The construction and commissioning phases of the Bash 500MW WF (and OHTL) will be undertaken by China Energy International Group Co. (CEEC). At this stage it is understood that about 700-1000 personnel will be involved during peak construction periods of the Wind Farm and OHTL (about 50-100 personnel will be involved in the OHTL construction). This will comprise a combination of Project Company, EPC Contractor (CEEC) and sub-contractor staff. Out of these 700-1000 personnel, about 350 - 500 will be employed from within Uzbekistan and the rest of the 60% of the workers will be recruited from China, Turkey, India and Europe.

BASH 52MW WF

HDEC will be the EPC Contractor for Bash 52MW WF and is expected to have 85 employees during the construction phase. According to HDEC, up to 50% of the workforce will be recruited locally during the peak construction period. At this point, the EPC expects to hire 2 skilled and 8 unskilled female employees. However, the EPC is still finalising the organogram and there is a chance that more female employees will be recruited.

2.5 Project Operations

The Bash 500MW WF and Bash 52MW WF will be operated by the same team under First National Operations and Maintenance Company Ltd. (NOMAC), a wholly owned subsidiary of ACWA Power. Operational workforce is expected to include about 35-40 personnel for the wind farm. The duration of the PPA will be 25 years from the Projects Commercial Operation Date.

The operation of the wind farms is likely to be monitored and controlled from a remote location, as such, only limited operational activities will be required such as

- Operation and maintenance to include normal daily operation of equipment including maintenance (electromechanical and housekeeping) to optimise energy yield and life of the system;
- Remotely activated turbine shutdown during excessive wind speeds;
- Management of operations in relation to resident bird and bat species (summer and winter) and migration periods during Spring and Autumn.

The OHTL under Bash 500MW WF will be operated and maintained by National Electric Grid Uzbekistan (NEGU). Dedicated/full-time personnel are not required for this purpose, however, both preventive & corrective maintenance will be undertaken at the OHTL.

2.6 Projects Milestones

Based on the details provided by ACWA Power, the milestone for the wind farms and the OHTL are provided below

Table 2-1 Key Projects Milestone/Timelines Dates

MILESTONES	DATE
Bash 500MW WF & OHTL	
Signing Project Agreements (PPA; Investment Agreement)	24th January 2021
Presidential Decrees	23rd February 2021 as amended on 8th July 2022
Land Allotment Orders	19 & 23 March 2021
Limited Notice to Proceed (LNTP)	July 2022

Full Notice to Proceed (FNTP)	December 2022
Site Mobilisation	September 2022
WTG Installation	March 2023
Substation Construction Commencement	April 2023
OHTL Design Approval	June 2023
Transmission Line Construction	September 2023
Commencement of WTG Reliability Tests	June 2024
Grid Available for synchronization & full production (Earliest connection date)	August 2024
Wind Farm Substation Commissioning Tests Completion	September 2024
Interconnection and synchronization at wind farm and grid-level substation are completed (Communication is established & ready for evacuation)	September 2024
Early Commercial Operation Date (>10WTG for each site)	January 2025
Project Commercial Operation Date	April 2025
Project Taking Over	April 2025
Bash 52MW WF	
Limited Notice to Proceed (LNTP)	November 2023
Notice to Proceed	March 2024
Commercial Operation Date	March 2025

2.7 Project Decommissioning

Potential impacts relating to decommissioning will be similar to those encountered during the construction phase. There are likely to be few decommissioning related risks to wind turbines such as minor quantities of hazardous components. Due to the small footprint of the projects WTG, all structures and infrastructure could feasibly be dismantled for material recovery.

Given that the decommissioning phase is not expected for at least 25 years from COD, there are no specific requirements for decommissioning at this time, since future environmental and social regulations have yet to be developed. As such, it is not considered practical to speculate on future environmental and social conditions including the sensitivity of current or future receptors at this time.

It is proposed that the decommissioning process will be managed via an updated ESIA and ESMS to identify measures for the prevention, avoidance or minimisation of impacts. This will also require a specific Decommissioning Plan. The studies will be undertaken at least 12 months prior to the time of decommissioning to reflect changes in regulations and standards, and requirements for compliance with the expected "circular economy" that is likely to be a

condition at that time. This will require maximising the re-use, recovery and recycling of components and materials to provide resource for future use.

It is anticipated that a specific requirement of decommissioning will be to restore habitats lost by the WTG footprints and this will be assessed in the future ESIA and Restoration Plans to identify the critical habitats and rare, endemic or endangered species that will benefit most from the newly restored habitats.

3 Overview of Local Environment & Social Context

3.1 Land Ownership

3.1.1 Bash 500MW WF

The Presidential Decree of the Republic of Uzbekistan No 314[3] dated 8th July 2023 includes the following requirements for the allocation of land to the Project:

- The Khokimiyat of the Bukhara region, by July 30th 2022, to ensure the allocation to the Ministry of Energy of a land plot on the right of permanent use, as well as the land area necessary for the construction of a wind power plant, substation and overhead power lines based on the coordinates of the land occupied by the supporting structures corresponding to the conditions specified in the Investment Agreement and the Agreement about the purchase of electric energy.
- The Ministry of Energy (MoE), for state and public needs, shall ensure the transfer of the lease to the:
  - Project Company a land plot allocated for the construction of a Wind Farm and a substation for a period equal to the period of implementation of the Investment Project.
  - National Electric Grid of Uzbekistan, JSC, a land plot allocated for the construction of the overhead power lines.
- At the same time, the decree included an exemption for the Project Company and NEGU from compensation for losses in agricultural production (compensation payments) when using agricultural land as part of the implementation of the Investment of the Project.
- Agree with the proposal of the Ministry of Investments and Foreign Trade, the Ministry of Agriculture, the Ministry of Water Resources, the Khokimiyat of Bukhara region on the transfer of lands allocated for the investment project with an area of 172.55ha, 0.18ha of which are irrigated in Gijduvan, Shofirkon, Peshku, Romitan, Jondor and Karakul districts of Bukhara region from the category of agricultural

[3] This Presidential Decree supersedes the earlier directives under the Resolution of the President of the Republic of Uzbekistan dated February 2021 PQ-5003 and the Land Allotment Order issued on 19th March 2021. Refer to the Bash 500MW WF ESIA Vol 2 for more details on the content of these directives.

land to the category of industrial land in accordance with the annexes of the Resolution.

Based on this, the land will be allotted to the Ministry of Energy who will sign a Land lease Agreement (LLA) with the Project Company for the Project site as well as the Purchase Electric Facilities (PEF). According to the Presidential Decree, the wind farm have been allocated 149.93ha based on the final project layouts submitted by ACWA Power to the government on 30th June 2022 (refer to table 3-1 below for land allocated for different Project facilities).

3.1.2 Bash 52MW WF

According to the draft lease agreement between the Ministry of Energy of Uzbekistan and FE 'ACWA Power UKS Green H2' LLC (Project Company), the site and the laydown area will be leased for the purpose of implementing the Project (the lease will be based on the Project footprint). According to the information provided by ACWA Power, the Bash 52MW WF has been allocated 21.673ha and a Presidential Decree will be issued for the same.

The table below shows the land allocated to both Bash WFs.

Table 3-1 Land Allocated to the Bash 52MW & Bash 500MW

PROJECT FACILITY	BASH 52MW	BASH 500MW	TYPE OF OWNERSHIP
WTGs. (Including foundation & hardstand and WTG transformer	6.08ha for 8 WTGs	39.58ha for 79WTGS	Land lease for the Projects lifetime
Roads	6.965ha	63.53ha	
Underground cable trench	Included in the land allocated to the roads land plots	28.03ha	
Wind farm sub-station	2.618ha	9.7618ha	
Lay down area (temporary laydown area, yard, office, storage, camp, batching plant)	4.0ha	9.0287	During the construction phase
Met mast	2.01ha	-	Land lease for the Projects lifetime
Total	**21.673**	**149.9305**	**n/a**

3.1.3 OHTL

The 162km OHTL route is located is an area of desert typology, forestry, agricultural and commercial land. The OHTL route cuts across six different districts of the Bukhara region. These districts include Gijduvon, Shofirkan, Peshku, Romitan, Jondor and Karakul districts.

3.2 Land Lease and Land Use

3.2.1 Wind Farms

The land within the Projects boundary (outside of the Bash 500MW & Bash 52MW WF footprint) is used by Kokcha LLC who are a cluster under the Committee for the Development of Sericulture and Wool Industry. Consultations undertaken during the Bash 500MW ESIA phase, revealed that they have been allocated 267,398.1ha of grazing land under their management which includes the land within the Projects boundary.

The total land allocated to both Bash 52MW and Bash 500MW is equal to 171.6035ha. This includes:

- 17.673ha and 4ha allocated to the Bash 52MW for the lifetime of the Project and during construction respectively.
- 140.9018ha and 9.0287ha allocated to the Bash 500MW for the lifetime of the Project and during the construction phase respectively.

Based on the total grazing land allocated to Kokcha LLC (267, 398.1ha, the permanent and temporary impacts to the grazing land as a result of the Projects is expected to be limited. This will constitute the following:

- 0.0066% permanent impact and 0.0015% temporary impact on grazing land from the Bash 52MW WF.
- 0.053% permanent impact and 0.0034% temporary impact on grazing land from the Bash 500MW WF.
- The total cumulative impact on grazing land for both Bash 52MW and bash 500MW will be 0.059% permanent impact and 0.0049% temporary impact on grazing land.

Based on the above, it is expected that the Project will have limited impact on Kokcha LLC (and its herders) activities and operations.

> ***Note**: The herders who previously used the Bash 500MW WF for grazing and accommodation structures have since been relocated to suitable alternative land as identified in the Bash 500MW WF RAP. It is noted that the Bash Projects sites will be accessible to herders during the operational phase (outside of the Projects footprint) though construction of structures will not be permitted within 1,000 health protection zone for noise.*

Signing of the Land Lease

The signing of both the land leases for the Bash 500MW & Bash 52MW WFs will be undertaken between the FE 'ACWA Power UKS Green H2' and FE 'ACWA Power Bash Wind' LLC Project Companies and the Ministry of Energy (Refer to Bash 500MW ESIA & Bash 52MW ESIA Addendum for more details on the outcome of consultations undertaken with Bukhara Region Khokimiyat).

3.2.2 OHTL

Land Lease

ACWA Power will transfer the operation of the OHTL to NEGU after completion of the construction phase. As such and in accordance with the Presidential Decree, ACWA Power will be granted with land usage rights and the required land will be allocated to NEGU on a permanent basis by the MoE. The land allocated to the OHTL tower footprint based on the Presidential Decree is 22.62ha. The OHTL footprint will affect 0.18ha of irrigated land out of the allocated 22.62ha and in order to mitigate against this loss, the Decree states:

- The Khokimiyat of Bukhara region, by the end of 2022, will ensure the development of new irrigated land plots in an amount equal to ten times the size of irrigated land plots, as well as new agricultural land equal to the area of pasture land, the land category of which is changed in accordance with this resolution.

Land Use

There are a total of 28 land users along the OHTL which include 6 clusters under the Committee for Sericulture & Wool Industry, 6 commercial enterprises, 7 farmers, 5 districts that own forestry land, 1 district that own commercial land 3 leased directly from the municipalities for pastoral use.

There are 6 PAPs with structures within the OHTL 100m Area of Interest (AoI) that will require to be moved. The 6 PAPs include 1 herder, 2 farmers and 3 commercial enterprises. Consultations have been undertaken to determine whether these structures can be moved to other areas of land that they own. However, all the PAPs have communicated that they prefer cash compensation and they will rebuild the structures in another location.

The OHTL AoI will also partially impact 6 farmers who grow wheat, barley, cotton and fruit trees. Temporary impacts will relate to erection of pylons and movement of materials while permanent impacts will be limited to where the pylons are located. It is expected that the farmers will still be able to farm under the OHTL outside of the RoW though such farming activities may include restrictions on the type of crops and trees that can be cultivated. Any loss and/or damage of crops and trees will be compensated in line with the Project specific RAP.

Among the 6 commercial enterprises located along the OHTL in Kurakul district, 4 are located on undeveloped land. 5 of these commercial enterprises (including 4 on undeveloped land) will experience permanent impact because the OHTL AoI will affect more than 50% of their land making it unviable. These PAPs have expressed concern that this will impact their future income prospects and those with undeveloped land may potentially be fined by the government if the land is not commercially developed within the stipulated timeline.

As such, consultations have been undertaken with Bukhara Regional Municipality to identify suitable alternative land. However, the Municipality has informed the Project that commercial land is allocated based on a competitive auction process and the impacted PAPs will have to individually apply for this process. Additionally, 3 out of the 5 affected PAPs have stated they want cash compensation instead of land replacement while the other 2 have been informed of the Municipality's decision and will be provided with compensation and support in line with the Project specific RAP.

3.3 Local Receptors

3.3.1 Wind Farm & OHTL

The Bash 500MW ESIA and the Addendum identifies the main sensitive receptors within 5km radius of the Wind Farms and 1km of the OHT and along the access road. The receptors within the defined Area of Influence (AoI) include residential, agricultural, structural, infrastructure, commercial and industrial. During the Bash 500MW WF ESIA, three accommodation structures were identified within the boundaries of the site. These were used by herders and their workers for accommodation and for their livestock. These have since been relocated to suitable alternative land outside of the Projects boundaries in accordance with the Bash 500MW WF RAP.

The nearest communities to the Wind Farm include Kuklam village (1.6km to the south east) and Ayakagitma village (4.9km to the west). The nearest residential receptors along the OHTL are located approximately 250m to the west though it is noted that there are herders' and farmers' structures along the alignment which will require to be relocated in accordance with the Project specific Resettlement Action Plan (RAP).

Details of the identified receptors, and potential impacts including mitigation measures are provided in ESIA Vol 2 and the Bash 52MW WF ESIA Addendum. A summary of these impacts and the key mitigations is provided below in Chapter 5.

4 PROJECTS ALTERNATIVES

4.1 Bash 500MW & 52MW WFs

4.1.1 No Project Option

The government of the Republic of Uzbekistan through the Ministry of Energy aims to increase the electricity production in the country to foster economic growth, develop and expand use of renewables and develop public-private partnership in the country's energy sector. This also included supporting widespread introduction of innovative technologies to develop hydrogen energy.

The Bash 500MW WF project forms part of the Ministry of Energy's plan to develop and expand renewable use and increase electricity production in the country to 29.3GW by 2030. In addition it will contribute to the 3GW estimated wind power contribution to the total renewable power generating capacity (wind & solar) of 8GW by 2030.

The Bash 52MW WF also aligns with the government's strategy to transition to a green economy which aligns with Uzbekistan's Paris Agreement Commitment of reducing greenhouse emissions per unit of GDP by 10% compared to 2010.

As such, a 'No Project' option has not been considered further for both Projects as considering this option would delay and possibly prevent the Government of Uzbekistan from meeting its 2030 renewable energy target which also includes reducing greenhouse emissions.

4.1.2 Alternative Project Sites

BASH 500MW WF

The process of site selection commenced in 2019 by the Ministry of Energy, State Geology Committee of the Republic of Uzbekistan and ACWA Power. The Ministry of Energy proposed specific area within the country where the wind farm can be developed. According to the State Geology Committee of the Republic of Uzbekistan, this area/territory was selected due to the area having less availability of minerals (precious and non-ferrous metals) than other areas/territories within the country. In March 2020, ACWA Power considered five (5) potential sites within this area for the development of wind power projects in the country as follows:

- Dzhankeldy: 7km west of Ayakguzhumdy;
- Bash: 30km west of Kokcha;
- Kanimekh 1: 20km northwest of Nurmakhan;
- Kanimekh 2: 50km north east of Aznek; and

- Kulkuduk area: 30km north of Uchkuduk.

ACWA Power selected the Bash site based on its high wind potential after reviewing the vortex data, wind campaign measurements, geological factors, existing infrastructure, and interconnection to the grid.

Besides the above, the site at Bash was also selected due to presence of existing road infrastructure in the project area.

The selection of a site with less wind potential will not allow for the wind turbines to harness sufficient wind energy required to generate the electricity thereby reducing the wind farm's potential to contribute to the renewable energy target of the country. The presence of existing road will reduce the need for new access roads to the site thereby minimizing environmental & social impacts of the project facilities.

The consideration of an alternative project location may not only be costly to the Project due to a need for construction of new access roads, it could also potentially result in additional environmental and social impacts.

On 27th October 2021 the Ministry of Energy provided the key steps of the site identification/selection process and a summary of this is outlined below.

ID	KEY STEP	DATE
1	Participation of ACWA Power in the International Conference on the development of oil and gas in Uzbekistan followed by the meeting in the Ministry of Energy of the Republic of Uzbekistan	Q2 2019
2	The delegation consisting of the specialist from the Ministry of Energy and NEGU visited ACWA Power's facilities in UAE and Saudi Arabia	Q2 2019
3	Proposal from ACWA to do a wind farm in Nurota mountains	July 2019
4	After the State Geology Committee of the Republic of Uzbekistan rejected giving the land in Nurota district and proposed land by SGC as not accepted by ACWA Power, Ministry of Energy proposed that ACWA comes up with new site in Bukhara and Navoiy regions	Q3 - Q4 2019
5	Based on the analyses of ACWA Power on Bukhara and Navoiy regions, the negotiations on Head of Terms started	July 2019
6	Head of Terms signed on the 20th September 2020 which includes the site coordinates for various wind power plants in Uzbekistan	September 2019
7	List of potential wind sites provided by Ministry of Energy based on satellite wind atlas, proximity to the national grid network	Q4 2019 – Q1 2020
8	Implementation Agreement signed on 5th March 2020 between ACWA Power and Ministry of Energy which includes a shortlist of 5 wind sites (including Dzhankeldy & Bash sites)	March 2020
9	Final Selection of the 2 sites (Dzhankeldy & Bash) following the final discussion with: • State Geology Committee (specifically in consideration of existing and future mining activities); • National Electric Grid of Uzbekistan (specifically in consideration of the length of the evacuation and future grid expansion plan); and	June 2020

ID	KEY STEP	DATE
	• Environmental & Social experts (in consideration of minimizing [potential environmental & social impacts).	
10	Project Agreements (PPA & IA) signed on 24th January 2021 which included the site coordinates for Dzhankeldy & Bash	January 2021

BASH 52MW WF

The Bash 52MW WF will be located within the same boundaries as the Bash 52MW WF. The site was selected after consideration of other sites under ACWA Power which include Dzhankeldy WF and Nukus for the following reasons:

- The Bash site has a higher capacity factor of 1-1.5%;
- The Bash 500MW WF site allows for ACWA Power to reduce any additional habitat loss impact under the Bash 52MW WF as only an auxiliary power building and step-up transformer will be required prior to interconnection to the Bash 500MW switching station and AIS.
- The topography in the ACWA Power Dzhankeldy 500MW WF site is more complex and would require higher level of earth works compared to the bash site; and
- The NUKUS site has limitations in the evacuation of the transmission system and the Project is under a PPP which would be extremely challenging to amend.
    - In addition, the land in NUKUS was not available for ACWA Power to undertake construction of the 52MW WF.

4.1.3 Project Technology

Different turbines were considered for the Project which would have required 111 WTGs for the site, but this was reduced to 79 Envision EN 171-6.5 MW model resulting in a much smaller footprint than was originally proposed, reducing the impact on critically important habitat for vulnerable and endangered species. The chosen technology finally selected also achieved the following:

- Technology allowing flexible use and maximising energy generation during high and low wind conditions;
- Ability to quickly slow and stop the rotating blades, called "shut down on demand" (SDOD) to prevent impacts with critically endangered birds of prey such as Egyptian Vulture and then restart quickly after the bird(s) are at a safe distance. This flexibility significantly reduces energy losses and risk of bird mortality;
- Least Cost of Energy (LCOE) which results in highest generation at lowest cost;
- Site Suitability of the chosen WTG Model and least footprint on natural and critical habitats and species; and
- The Project Schedule agreed with the Ministry of Energy.

***Note**: The Bash 52MW will use the same turbine technology as the Bash 500MW WF which is the Envision EN 171-6.5.*

4.1.4 Wind Farms Projects Layouts

4.1.4.1 Bash 500MW WF

Several changes were made to the positioning of the WTGs based on the wind measurement campaign, due to potential environmental & ecological impacts, due to location of existing infrastructure and utilities and due to potential social impacts to land users, existing houses, settlements and commercial facilities.

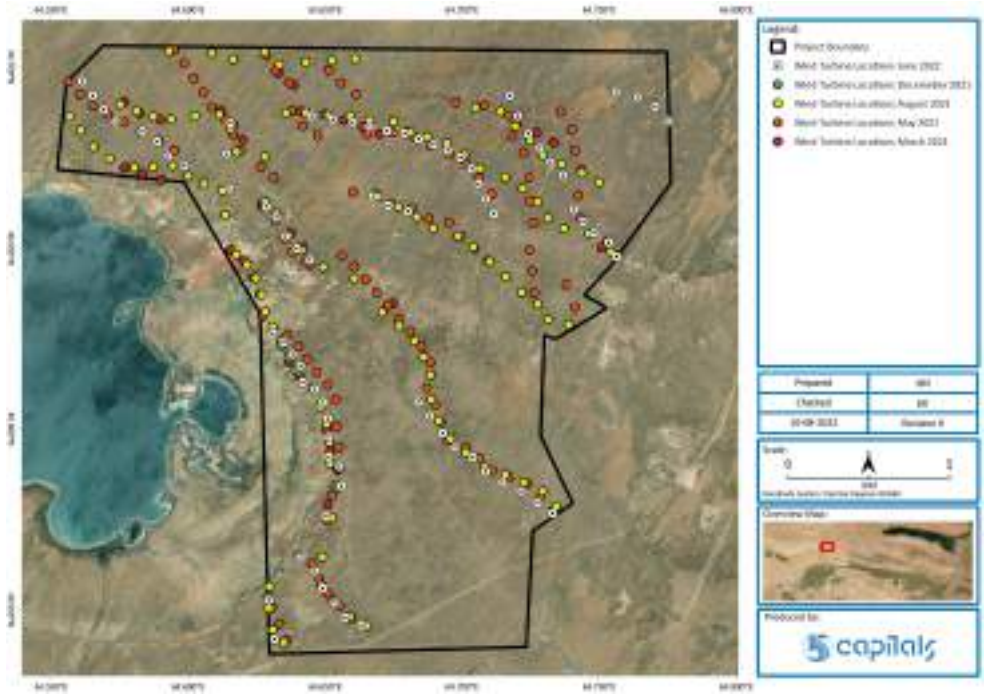
ECOLOGICAL CONSIDERATIONS

Due to the proximity of the Bash WF to Lake Ayakagitma (IBA site) a number of design changes were undertaken over 9 months including the final reduction of WTGs to the current 79 WTGs as shown in the table and figure below.

Table 4-1 Optimisation of WTGs for the Bash WF

MONTH	NUMBER OF WTGS
March 2021	91
May 2021	111
August 2021	111
November 2021	79

Figure 4-1 Overlay of WTG Considered in March, May, August, November 2021 and June 2022 Showing Difference in WTG Location



These changes were undertaken not only to optimise the wind potential but also based on the following ecological considerations:

- Establishment of a 2km buffer zone between Lake Ayakagitma and the nearest WTG.
  - As a result, ACWA Power undertook micrositing of 3 WTGs in order to align with a 2km buffer zone from the lake.

Table 4-2 WTGs moved due from 2km buffer zone

WTG ID	Distance Moved (m)
BAS50	147
BAS51	175
BAS52	208

- Micrositing of WTGs within 750m of active Tier 1 bird species' nests (such as Egyptian Vulture);
  - 4 WTGs located within 750m of known active Tier 1 species' nests have also been microsited.

Table 4-3 WTGs moved due to Active Tier 1 Species nests

WTG ID	Distance Moved (m)	Remark
BAS59	30	WTGs moved from an Egyptian Vulture nest
BAS60	173	
BAS70	101	WTG moved from a Golden Eagle nest
BAS62	84	WTG moved from an Imperial Eagle nest

- Avoidance of the Southern Even-fingered Gecko habitat.
  - The suitable habitat for the Southern Even-fingered Gecko lies in the valley adjacent to the lake while the Wind Farm BoP and infrastructure is on the highland area.

Existing Infrastructure & Utilities

Stakeholder consultations were undertaken between April to August 2021 before the finalisation of the 79WTG layouts in order to ensure that the Wind Farm facilities are located within the required buffer zones for existing infrastructure and utilities. As a result, the 79 WTG layout ensures that:

- All Wind Farm facilities are within 350m of Asian Trans Gas facilities which includes gas pipeline.
- The design adheres to a 12m and 15m buffer zone between the Wind Farm facilities and the railway line and railway station respectively.
- No Wind Farm structures located below existing OHTLs.

HUMAN SETTLEMENTS & LAND USE CONSIDERATIONS

The Wind Farm boundary is located 1.6km to Kuklam village and 4.9km from Ayakagitma village. The siting of the 79WTGs ensures that a distance of 1000m is in place which is required as part of the noise health protection zone (from nearest WTGs).

In order to minimize the impact on grazing land owned by Kokcha LLC and used by herders at the Project site, only the BoP area will be permanently impacted and this accounts for approximately 158.9ha of the total 285.1ha allocated to the Project under the Presidential Decree. This 158.9ha only impact accounts for 0.059% of the total land allocated to Kokcha LLC within and outside the Project boundary. This means that there will be minimal disruption to herding activities during the construction and operational phase of the Project.

In order to assess and mitigate any impacts on people's livelihoods (known as "Project Affected Persons), the Project will implement a project specific Resettlement Action Plan (RAP) which identifies alternative land for herders from Ayakagitma village and those employed by Kokcha LLC (it is noted herders under Kokcha LLC have stated that they prefer cash compensation to the identified grazing land). Additional information is provided in the project specific RAP.

4.1.4.2 Bash 52MW WF

ECOLOGICAL CONSIDERATIONS

The location of the 8WTGs was undertaken in consideration of all the ecological buffer zones established under the Bash 500MW WF ESIA. These include:

- All the WTGs are located more than 2km from Lake Ayakagitma and the cliffs.
- All the WTGs are located over 750m from Category 1 species' nests.
- All WTGS apart from two are located outside the 500m construction buffer zone for Category 2 species nests.
    - Two Kestrel nesting locations are located within 500m from a planned road alignment and a met mast. As such, construction scheduling will consider the breeding season and pre-construction surveys and monitoring in line with the Breeding Bird Protection Plan.
- All WTGs are located outside of the 200m construction buffer zone for Category 3 species nests.
- All the WTGs are located over 2km away from suitable Southern Even-fingered Gecko habitat which lies in the valley adjacent to Lake Ayakagitma. The proposed WF BoP and infrastructure is on the highland area away from this critical habitat.

In addition to the above, ACWA Power will also install four (4) additional Identiflight camera system in addition to the towers within the Bash 500MW WF and implement Shut Down on Demand.

LAND CONSIDERATIONS

It is estimated that the 158.5748ha of land permanently allocated to Bash 52MW and Bash 500MW WFs will only impact 0.059% of the total grazing land allocated to Kokcha LLC within and outside the Project boundary. This means that there will be minimal disruption to herding activities during the construction (outside of the construction buffer zones) and operational phase of the Project.

It is noted that the herders who formerly used the Project site have been relocated to suitable alternative grazing sites under the Bash 500MW WF Resettlement Action Plan (RAP).

4.1.5 OHTL Route

In March 2021, two (2) OHTL options were considered for the routing of the proposed OHTL as presented below:

- **Option A**: 95km OHTL from the Project site either with a rating of either 220kV double-circuit or 500kV single-circuit.
- **Option B:** 250km OHTL (from Dzhankeldy Project site to Bash Project site to an existing substation at Karakul) with a rating of 500kV single circuit

Option B was selected and increased to 290.5km. Approximately 128.5km of the OHTL runs from Dzhankeldy project site to Bash project site and approximately 162km runs from Bash site to an existing substation in Karakul. This Option was also revised in May 2021 to change its routing due to the following reasons:

- To avoid proximity of the OHTL to the Ayakagytma lake; an IBA drainage lake approximately 500m west of the Project site.
- To avoid the Kuldjuktau mountain cliffs along the Dzhankeldy to Bash route which are used by nesting birds of prey and for roosting and breeding bats
- To avoid proximity of the OHTL to agricultural zones/ farmlands, water bodies (lakes, ponds, canals, irrigation channels, etc.).
- To avoid human settlements and to avoid the need for any physical displacement & resettlement;
- To avoid proximity to bird migratory flyways
- To select areas for the routing that is close to existing roads and railway and;.
- To select areas for the routing that is close to the existing EBRD approved 500kV Navoi- Muruntau transmission line.

Figure 4-2 Revised Option B OHTL Alignment & Substation – May 2021

By mid-May 2021, technical studies (OHTL pre-feasibility studies) were being undertaken by Juru Energy on behalf of ACWA Power along three (3) OHTL alignments as shown below.

Figure 4-3 The three (3) OHTL Alignment Options – May 2021

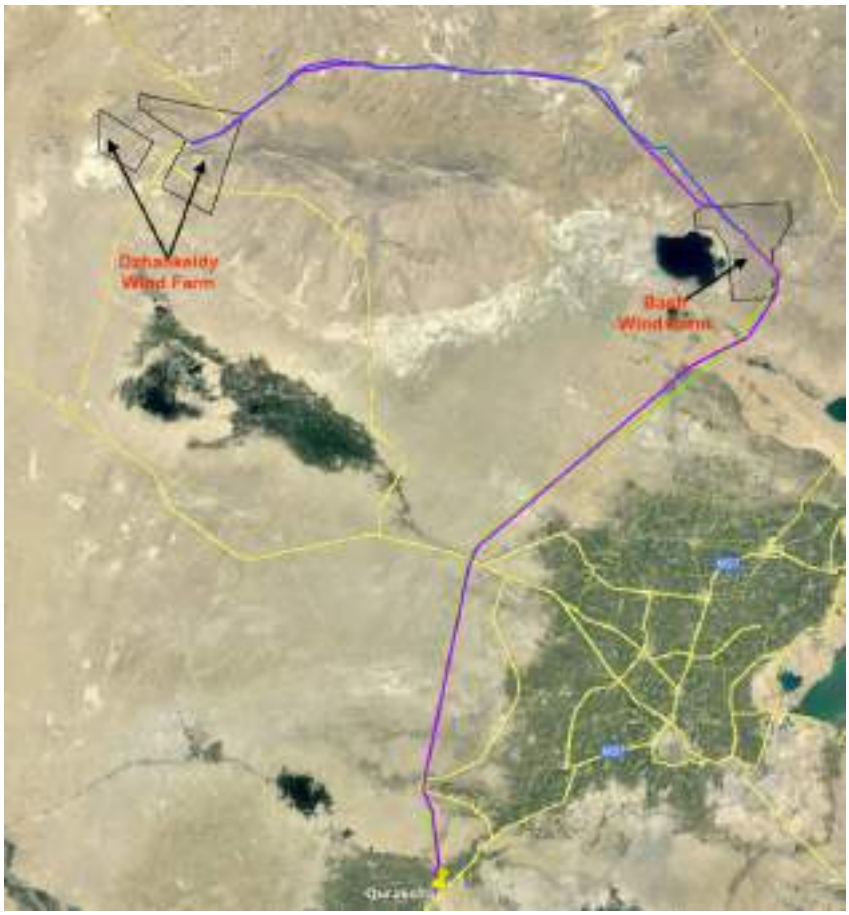
Key to OHTL Alternatives

- **Green Line**: OHTL 500kV Line 1
- **Violet Line:** OHTL 500kV Line 2
- **Cyan Blue Line:** OHTL 500kV Line 3

Studies along the Cyan Blue Line-Line 3 were discontinued along the Bash to Karakul substation and a new route was considered for the Dzhankeldy to Bash OHTL due to the environmental and social constraints identified along the proposed alignment.

The figure below shows the new alignment options considered in August 2021.

Figure 4-4 The Three (3) OHTL Alignment Options - August 2021



Key to OHTL Alternatives

- **Green Line**: OHTL 500kV Line 1
- **Violet Line:** OHTL 500kV Line 2
- **Dark Blue Line:** OHTL 500kV Line 3

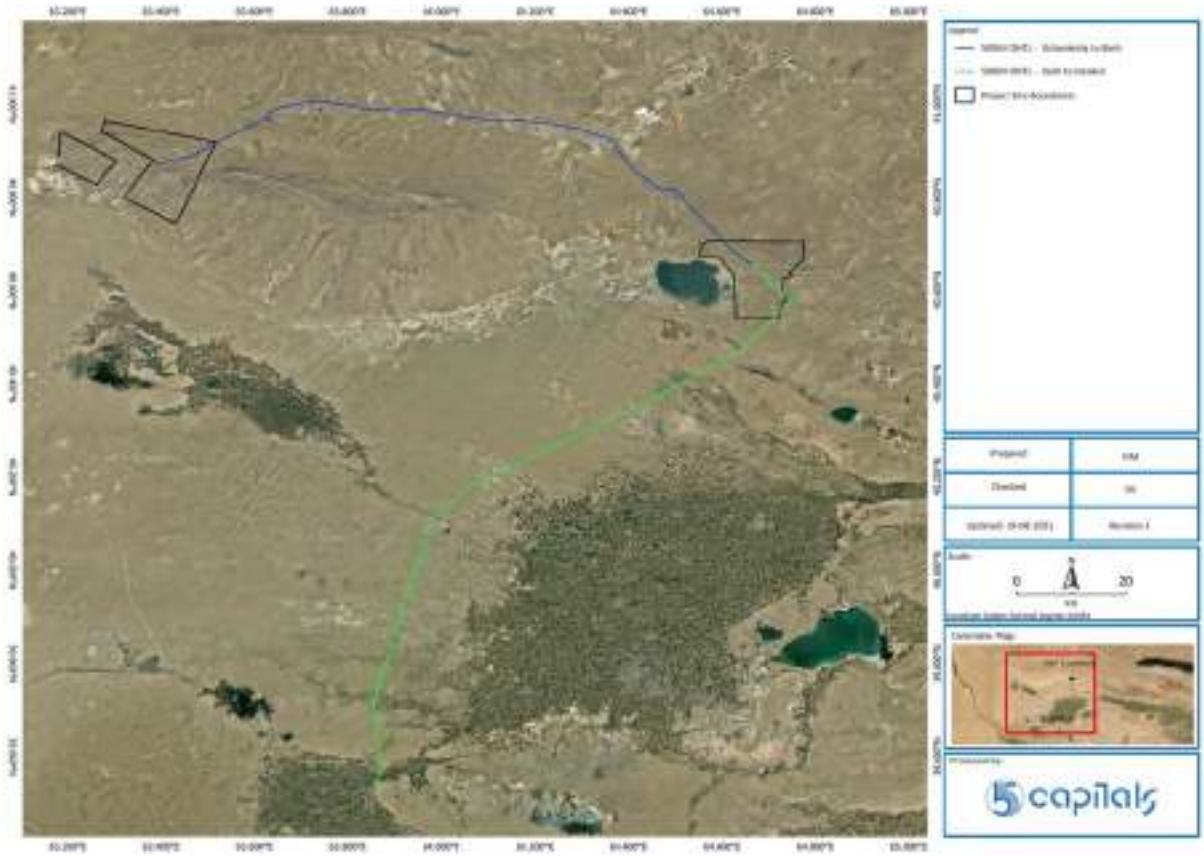
Based on the findings from site visits, ecological surveys undertaken along the route and E&S Constraint analysis conducted by 5 Capitals, the pre-feasibility study recommended that Line 1 (green line) would be the best alignment between Bash to Karakul due to the limited number of crossings. In August 2021, this OHTL Line 1 was slightly revised to avoid small farmlands along

the route as far as practicable and to ensure the line connects to the available spare bay at Karakul substation.

For the Dzhankeldy to Bash route, the pre-feasibility study recommended that Line 3 (dark blue) would be the best alignment as it runs parallel to the highway, existing transmission line and access road. The highway and access road will provide easy access during the construction phase and maintenance work during the operational phase. Line 3 is also located as close as possible (approximately 100-140m) of the existing highway where the gecko habitat overlaps with the highway, and is more aligned with the existing railway and existing 220kV OHTL corridor. This allows for minimal additional habitat loss of the gecko, and minimizes the amount of ground disturbed by construction vehicles and machinery.

The proposed Dzhanekldy – Bash – Kurakul OHTL alignment was submitted to NEGU by ACWA Power in August 2021 and this was approved by NEGU in November 2021 following their review of the OHTL pre-feasibility study and consideration of environmental & social impacts of other OHTL alignment options (see the figure below).

Figure 4-5 Proposed OHTL Alignment – August 2021



5 SUMMARY OF MAIN ENVIRONMENTAL & SOCIAL IMPACTS

5.1 Terrestrial Ecology

5.1.1 Wind Farm

BASELINE CONDITIONS

Biodiversity baseline studies for the Bash 500MW Wind Farm Project were undertaken to understand the existing biodiversity and ecosystem services in the area that may be affected by the project. Survey boundaries were determined by understanding both the potential Area of Influence of the proposed project as well as the Ecologically Appropriate Area for Analysis (EAAA) for various species.

The Bash 52MW WF Extension lies within the footprint of the Bash 500MW Project. As such, baseline surveys that were undertaken for the Bash 500MW Project are equally applicable to the Bash 52MW Project as well.

Flora

Habitat mapping exercises and botany transect surveys were undertaken to understand land use and land cover and to identify biodiversity including rare and endemic floral species. The Bash wind project is situated in south-western part of the Kyzylkum, desert in the Bukhara Province of Uzbekistan. The dominant habitat type in the survey area is "sandy and sandy-loamy desert plain" followed by "fixed and semi-fixed sands".

The plants recorded within the project site during the field survey in April and June includes 49 species of which one species is nationally red-listed; *Tulipa leihmanniana*. White Saxaul and Black Saxaul, which are nationally protected trees were also recorded during the survey. National red listed and endemic range restricted species were noted as "species of concern" for which potential impacts of the wind farm were assessed.

Birds

The project site is located within the convergence of two major migratory flyways; the Central Asian Flyway and the West Asian/East African Flyway. In order to analyse the potential impacts on migrating birds, the spatial context around the project site was assessed including Important Bird Areas (IBAs). A number of Important Bird Areas were highlighted that exist in the immediate area of the wind project as well as several in the larger region; Karakyr Lakes, Sarmysh Nature Park, Aydarkul Lake and Tudakul and Kuymazar Reservoirs all lie within 80-100 km of the project site.

Based on the location of various lake and river deltas, and the mountain landforms to the north and east of the project site, the predicted migratory flight paths analysis anticipates that migratory birds would cross the site from the northeast heading towards Ayakagitma Lake or further south.

Given the potential for threatened species and the sensitivity of birds to wind farm developments, vantage point and transect surveying were undertaken utilising the Scottish Natural Heritage (SNH) guideline methods to provide adequate data for the development of Collision Risk Models (CRM). With specialised nest searching studies also conducted, the wind farm area and associated OHTL alignment route was comprehensively surveyed year-round to ensure that seasonal changes in avifauna abundance and diversity due to migration and breeding were captured.

During the initial desktop review, a number of vulnerable (VU), endangered (EN) and critically endangered (CR) birds of prey (raptors), ground birds and waterbird species on the Global IUCN Red List, as well as endemic, range restricted, and migratory species were anticipated to occur in the project area.

Among the IUCN endangered species, the Steppe eagle and Egyptian Vulture were recorded during the survey. Other threatened and sensitive species of note include the Saker Falcon (EN) and Houbara Bustard (VU).

Waterbird surveying of Ayakagitma Lake found relatively low numbers in comparison to earlier reports from public databases (>20,000 birds in 2000). 76 species were recorded at the Lake over the course of one year of which the Common Coot and Gadwall were the most abundant species.

Specialised surveys were undertaken to assess the presence of the "vulnerable" Houbara Bustard during the peak mating season, when this species can be easily observed. Stakeholder engagement exercises indicated that the wind farm area lies within both prime breeding ground as well as a migratory corridor of this species.

Nest search surveys of the cliffs that border the Lake Ayakagitma basin were recorded to support 16 breeding bird species; of which three are threatened raptor species: Imperial Eagle, Steppe Eagle and the Egyptian Vulture. During the 2022 Spring nesting survey, active nests of 6 species were found of which Common Kestrel was the most numerous.

Bats

The EAAA was surveyed with passive and active acoustic detectors to capture bat echolocation data over time. Bat calls parameters known for European bat populations and bat species from neighbouring countries of Uzbekistan were used for identification and analysis. Specialized bat roost searches were undertaken within the project boundaries to identify residential bats roots, wintering roosts, maternity colonies and mating colonies.

A total of 7 species of bats were identified during the surveys. No globally threatened species were registered during the survey. Moderate levels of bat activity were recorded, characterized by sporadic highs and lows likely driven by weather conditions. Typically, bat activity is higher during warmer nights, post-rain, with low wind speeds.

Common pipistrelle (*Pipistrellus pipistrellus*) roosts were identified during the roost survey near the lake and in the Ayakagitma village.

Mammals (Non-Volant)

Surveying for non-volant mammals was undertaken in the spring and summer seasons, the periods of most activity. Using a combination of diurnal and nocturnal transect surveying a total of 13 mammalian species have been recorded in the Bash wind farm project area. Among these were one IUCN listed VU species, the Goitered Gazelle and one national Red List Near Threatened (NT) species, Brandt's Hedgehog. The general mammalian diversity of the area is considered relatively rich.

Reptiles and Amphibians (Herptiles)

Diurnal and nocturnal transect surveying were undertaken in late Spring and mid-Summer, as these represent the seasons of highest reptile activity. Of the 8 species recorded, three species are threatened on the IUCN Red List. Of greatest concern is the critically endangered Southern Even-fingered Gecko. This species is a particularly sensitive ecological receptor. Recent DNA analysis shows that this gecko population distinct from its conspecifics in the area and likely to be classified as a new locally endemic species within Central Uzbekistan. Given its unique nature, this species is ranked #54 on the Top 100 reptile species Edge of Extinction list. Among other species of note were that Russian Tortoise (VU) and the Desert Sand Boa (NT). The most abundant species recorded on site were the Russian Tortoise and the rapid racerunner.

Insects (Entomofauna/Invertebrates)

Invertebrate surveying was undertaken in the Spring season, which is the optimal time as invertebrate populations are at a peak due to the increase in available vegetation. A series of transects were carried out where sweep netting and manual collection techniques were used to identify the species present and provide an indication of relative abundance and population density.

With 11 species, the order Hymenoptera was the most abundant among the 9 orders recorded. The entomofauna was typical for this area. No species listed in the Red Book of Uzbekistan or IUCN Red List were found among the 25 insect species.

Critical and Priority Species

The Bash 500MW and Bash 52MW WFs lie within the same boundary. As such the CHA process that was undertaken for the Bash 500MW WF Project is considered to be applicable to the Bash 52MW WF Project as well. A CHA Addenda has been prepared for the Bash 52MW while the section below summarizes the outcome of the Bash 500MW WF CHA process.

The findings of the biodiversity baseline studies confirmed that the project area has a diverse and abundant distribution of flora and fauna species. A number of these biodiversity elements have been identified as "elements of conservation concern". The EBRD PR6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources requires that baseline studies conclude with a Critical Habitat Assessment (CHA) to determine if any features in the project area qualify as priority biodiversity features or critical habitat.

A CHA was undertaken for the project, which identified species of concern which have the potential to trigger criticality for the project's area of influence. It was found that the project area has a relatively low risk of triggering criticality for the majority of identified potential species of concern. The review indicated that Critical Habitat (CH) thresholds has been triggered in reference to two species; the Critically Endangered Southern Even-fingered Gecko and the Vulnerable Houbara Bustard. Other identified species of concern, including nationally listed bird, mammal, and reptile species, as well as range-restricted and endemic flora species, were classified as Priority Biodiversity Features (PBFs) based on EBRD PR6.

All species of concern were integrated into the biodiversity assessment to identify potential impacts arising from the construction and operation of the wind farm project and associated facilities. Recommendations for management, mitigation and monitoring in line with EBRD, IFC and lender requirements and international best practice were proposed to alleviate and reduce the significance of impact to all biodiversity elements of concern within the project area. It should be noted however that the habitat for the Southern Even-fingered Gecko does not occur within the location for Bash52 MW WF, although it has been included on a precautionary basis.

IMPACT ASSESSMENT

Bash 500MW WF Project (Construction)

A comprehensive Biodiversity Impact Assessment was undertaken. Sensitive ecological receptors anticipated to occur within the area of influence were identified and evaluated against potential impacts arising from different phases of the project.

The construction phase of the project was initially predicted to have major to moderate impacts within the AoI including potential habitat loss, biodiversity loss, biodiversity

displacement and deterioration of environmental quality. However, with the implementation of both general control measures as well as species-specific mitigation measures, residual impacts of the construction phase are predicted to be minimal.

Habitat and biodiversity loss is anticipated to occur through clearing, excavation and earth works. The Southern Even-fingered Gecko (CR) and the Russian Tortoise (VU) are both burrowing species considered as Priority Biodiversity Features (PBFs) and particularly vulnerable to excavation and earth works. Post-construction restoration of areas to suitable habitat conditions via seeding, re-planting, and landscaping with native, high-value flora species will further serve to reduce the impact of habitat loss.

Biodiversity loss is likely to be augmented by vehicular collisions, poaching, littering and general disturbance. With the influx of personnel and a degree of urban influence, shyer species may be displaced away from the project area and proliferation of pest species and other urban-adapted species may occur. However, the surrounding areas of the landscape support similar habitat types and are not constrained by large-scale urban or industrial developments. Therefore, it is not anticipated that displaced individuals will have a significant impact on adjacent ecosystems.

In order to mitigate against biodiversity loss during the construction phase, preconstruction surveys were carried out during the active period of early spring and summer to identify suitable release sites and to relocate threatened reptiles; Southern even-fingered Gecko and the Russian Tortoise within the construction footprint. Subsequent efforts for the Southern Even-fingered gecko will be carried out during the active period in summer when average air temperature is around 27°C with low wind speeds whereas efforts for the Russian Tortoise will be undertaken during the Spring. The efforts will be undertaken during the active season throughout the construction phase of the project. The Reptile Relocation Plan provides detailed instruction on the surveying and relocation methodology required to mitigate construction impacts on these two reptile species of concern.

A Breeding Bird Protection Plan (BBPP) was prepared to guide the implementation of impact mitigation that will be undertaken for the protection of breeding bird species that may be impacted from the project construction. Pre-construction nest search surveys were undertaken to identify nest locations and implement species specific construction buffer zones. During subsequent years, the nesting surveys will be repeated during Spring in order to monitor the status of nesting as well as identify any new nesting locations.

In order to mitigate the risk of vehicular collision strict speed controls will be implemented and driving and operation of heavy machinery will be restricted to daylight hours. Protocols will also be in pace for the removal of any road-kill carcasses to at least 10 meters away from access roads during the construction phase to reduce the risk of vehicle collision to scavenging, slow moving and small species.

Besides the biodiversity impacts of the construction phase environmental quality and the quality of the environmental may also decline due to dust, noise pollution, and soil compaction/erosion etc. These impacts are expected to be minimal with the appropriate control measures outlined in the Construction Environmental & Social Management Plan in place.

Pre-construction flora surveys were conducted for the purposes of seed collection, demarcation of areas to be protected, and translocation of whole specimens as per the Flora Conservation Action Plan which provides a guide to the species-specific impact mitigation that will be undertaken for the protection of sensitive flora species that may be impacted from the project construction. The Restoration Action Plan has been prepared to guide the post-construction restoration of areas to suitable habitat conditions via seeding with seeds collected prior to the construction phase, re-planting, and landscaping with sensitive flora species will further serve to reduce the impact of habitat loss.

Bash 52MW WF Project (Construction)

The Bash 52MW Extension lies within the footprint of the Bash 500MW Project and includes the addition of 8 wind turbines as well as associated access roads and pads required to construct and erect the turbines. As such, the biodiversity impacts arising from the Bash 52MW Extension have been assessed in two ways:

- Assessment of the additional impact from the Bash 52MW Extension Project when considering the Bash 500MW Project as an existing project;
- Assessment of the cumulative impact of Bash 52MW and Bash 500MW together when considering the original greenfield site.

All the identified impacts for Bash 500MW will also be applicable for the Bash 52MW Extension but the significance of adding 8 turbines to an existing 79 turbine wind farm has been determined to be insignificant across the majority of impacts. This is especially considering that the same mitigation measures required for Bash 500MW will be applied to Bash 52MW Extension. The main construction impacts that have some additionality from Bash 52MW include the added habitat loss due to clearance of additional access roads, temporary areas and turbine pads. The quantitative amount has been calculated and presented in the assessment of the additional impacts as well as cumulative impacts of Bash 52MW and Bash 500MW. Bash 52MW will be required to implement the same mitigation strategies inclusive of pre-construction reptile relocation, flora conservation, and breeding bird protection protocols as well as post-construction habitat restoration.

Operational Phase

Operation of the wind farm project poses a unique threat to birds and bats due to the potential for collision with moving turbines. This could potentially have a major impact on resident and migratory bird and bat populations and cause significant loss to biodiversity.

With respect to bird turbine collision, the magnitude of risk and significance of the potential impact is highly dependent upon the location of the wind farm and landscape context, spatial layout, height and length of turbines, and the types and numbers of birds present. Quantitative assessment was undertaken by utilizing a Collision Risk Model (CRM) developed as per SNH Guidelines.

The results of the CRM analysis indicate that the Bash Wind Farm has a low-moderate level of collision risk for sensitive bird species. Among the threatened species that were documented during the VP surveys, Greater Spotted Eagle, Steppe Eagle, Golden Eagle, and Egyptian Vulture, had CRM predicted fatality rates ranging from one per 4 years (Steppe Eagle) to one per 83 years (Greater Spotted Eagle) under the most realistic Collision Avoidance (CA) scenarios modeled.

Three non-threatened, albeit at-risk species were predicted to experience greater than one fatality per year; Eurasian Kestrel; Common Crane and Lesser Kestrel. Predicted fatality rates fall below one per year for all other species of this group. For non-threatened bird species, the CRM predicts collision rates of 0.93 to 2.66 per year for Gadwall, Black-crowned Night-Heron, Tufted Duck and Mallard. These four species are all very abundant, widespread species with large global and national populations, and no elevated conservation/protected status at national or international levels. Predicted collision rates for all other species under most realistic CA scenarios are below one per 6 years.

For Bash 52MW Extension, the CRM was updated to include the additional 8 turbines as the spatial area of collision increases respectively. The change in collision risk ratio is an approximate 10% increase in comparison to the original Bash 500MW CRM; however, this is pre-mitigation, furthermore in context represents negligible change in the actual number of predicted individual collisions. Lastly, as described below, all mitigation in place for Bash 500MW Wind Project will also be carried over and applied in kind to Bash 52MW Extension.

Mitigation measures will be implemented during the project design and operation phases of the wind farm project to reduce the impacts of bird collision with wind turbines for both Bash 500MW and Bash 52MW WFs. Collision mitigation through project design include change in wind turbine layout, decrease in number of turbines, micrositing of specific turbines within 750m of threatened raptor nests and micrositing of all turbines within 2km of the Lake Ayakagytma. Micrositing requirements as per Bash 500MW have been duly considered and implemented; none of the Bash 52MW turbine locations are within any of the protective buffers of any known raptor nests.

Predicted fatality levels for bat species may have potential to impact regional populations of these species, and therefore warrants special consideration in the biodiversity management planning for the project. The impact of bat turbine collision is expected to be minimised for all species with the implementation of design and operational mitigatory measures. in the design and operation phases of the project. In particular, project design mitigation measures include using wind turbine generators that do not support roosting bats and implementing lighting systems that are least attractive to insects. As the predicted fatality from collision for bats is not quantitative, the Bash 52MW Extension cumulative impacts were assessed on a qualitative basis.

A Collision Risk Management Plan (CRMP) has been prepared to mitigate the bird and bat turbine collision. The plan provides details of the camera-based automated Shut Down On Demand System (SDOD), Identiflight, that will be implemented site-wide for Steppe Eagle, Egyptian Vulture, Cinereous Vulture, Golden Eagle, and White-tailed Eagle. Should the PCFM prove that thresholds for any other species are reached, this will trigger an upscaling of mitigation as provided in the Collision Risk Management Plan (CRMP). Bash 52WM Extension shall apply the same measures and SDOD to all 8 added turbines.

A Potential Biological Removal (PBR) analysis was undertaken to determine the thresholds for acceptable levels of annual losses. Should the PCFM prove that thresholds for any bat species are reached, this will trigger the adaptive Cut-in Speed Curtailment program detailed in the Collision Risk Management Plan (CRMP). For birds, this will trigger a Biodiversity Committee meeting to review the collision data and discuss an adaptive management approach to rectify and prevent further threshold breaches.

During the operation phase of the project fatality monitoring will be undertaken as per the Post-Construction Fatality Monitoring Plan (PCFM) which details the intensive carcass searches that will take place throughout the wind farm The PCFM will be continued for 5 years until the risk to birds and bats is considered 'negligible' in consultation with the lenders.

In order to further reduce the risk of collision to scavenging birds, a Livestock Management Plan has been prepared to ensure the management and safe disposal of livestock carcasses so as to reduce food availability to scavengers within the project footprint especially near the wind turbines.

The predicted cumulative collision risk for the Houbara Bustard, a CH species, is 1.22 collisions per year. However, the predicted collision risk for this species is based on hypothetical scenarios where a single individual is observed flying within the rotor swept zone, in actuality, no individuals were recorded at any time in the rotor swept zone. The anticipated collision risk for all other threatened bird species indicates cumulative collisions of less than 1 per year. Two species of non-threatened birds are anticipated to experience a cumulative collision risk greater than one per year. There species are abundant, widespread species with very large

global populations, and are not classified with an elevated conservation status at either the national or international levels.

The CHA indicates that the project area is a Critical Habitat for Southern Even-fingered Gecko and Asian Houbara. A further 36 species are designated as Priority Biodiversity Features (PBFs). As per the requirements of EBRD PR6 and IFC PS6, additional conservation outcomes are required to achieve Net Gains (NG) and No Net Loss (NNL) for the populations of CH species and PBF species respectively, in the project area. The Biodiversity Action Plan (BAP) illustrates the pathway to NNL for PBFs and, with the Compensation Offset Plan, provides the strategy designed to achieved NG for CH species.

5.1.2 OHTL

BASELINE CONDITIONS

Flora

Habitat mapping and botany transect surveys were undertaken to understand land use and land cover and to identify rare and endemic floral species. The associated OHTL corridor was surveyed with approximately a 100m buffer in width along the planned route. The dominant habitat type of the OHTL alignment is described as "*Fixed and semi-fixed sands low interspersed with ecotones of Relic Uplands, Sandy and sand-loamy desert plains, Saline lands*" and "*Agricultural lands*". One endemic endangered species were recorded; *Calligonum zakirovii.* Other endemic species include *Acanthophyllum cyrtostegium, Ferula kyzylkumica* and *Tulipa lehmanniana.*

Birds

Surveys along the associated OHTL alignment registered two (2) threatened species; the Egyptian Vulture (EN) and the Houbara Bustard (VU). The nationally red listed Golden Eagle was also observed along the OHTL alignment. The greatest species diversity was observed in areas with water bodies and agricultural lands. Existing transmission lines in the vicinity of the project area were also surveyed to assess bird mortality from operating OHTLs. Three carcasses were observed belonging to White Pelican, White-tailed Sea Eagle and Rufus Scrub Robin. These species are widespread in the Kyzylkum desert and are of least conservation concern. The presumed cause of death was collision with OHTL cables.

Bats

The initial OHTL reconnaissance survey indicated that there did not appear to be substantial structures that would be conducive to roosting bat colonies. Therefore, detailed bat roost searches were not carried out for the Bash OHTL alignment.

Mammals excluding Bats (Non-Volant)

Mammal surveying was undertaken along the proposed OHTL alignment corridor in the summer. Using a combination of diurnal and nocturnal transect surveying. Incidental sightings and records (visual and audible) as well as indirect records of tracks, burrows, droppings, and shelters were used to assess species abundance and diversity. Burrow entrance counts were carried out to establish abundance of rodent species. A total of 9 mammalian species were recorded of which Rodents were the most abundant; Small five-toed jerboa, Libyan jird, Long-clawed ground squirrel, Great gerbil, Midday jird and Yellow-ground squirrel. These species are widespread and are of least conservation concern.

Reptiles and Amphibians (Herptiles)

Diurnal and nocturnal transect surveying were conducted in June to assess the herptile species abundance and diversity along the OHTL alignment of the wind farm. 8 species were recorded among which Russian Tortoise, Rapid Lizard, Reticulate Racerunner, Sunwatcher toad-headed agama, Steppe agama and Caspian Monitor were recorded.

Insects (Entomofauna /Invertebrates)

Invertebrate surveying was undertaken by visual and netting surveys covering various transects throughout the OHTL corridor. A total of 45 species were recorded of which *Hyalomma asiaticum* and *Cataglyphus* species were the most Abundant. A single endemic species (Uzbekistan and Turkmenistan) was registered, *Lioponera desertorum*. Invertebrate community present within the corridor is typical of the region and no representatives of threatened species were documented.

Critical and Priority Species

The findings of the biodiversity baseline studies confirmed that the project area has a diverse and abundant distribution of flora and fauna species. A CHA was undertaken for the project, which identified species of concern which have the potential to trigger criticality for the project's area of influence. It was found that the project area has a relatively low risk of triggering criticality for the majority of identified potential species of concern. The review indicated that Critical Habitat thresholds has been triggered in reference to two species; the Critically Endangered Southern Even-fingered Gecko and the Vulnerable Houbara Bustard.

The CHA classified 36 species as Priority Biodiversity Features (PBF) among which are nationally listed bird, mammal, and reptile species, as well as range-restricted and endemic flora species.

All species of concern were integrated into the biodiversity assessment to identify potential impacts arising from the construction and operation of the wind farm project and associated facilities. Recommendations for management, mitigation and monitoring in line with EBRD, IFC

and lender requirements and international best practice were proposed to alleviate and reduce the significance of impact to all biodiversity elements of concern within the project area.

IMPACT ASSESSMENT

The construction phase of the project was initially predicted to have moderate impacts within the AoI including potential habitat loss, biodiversity loss, biodiversity displacement and deterioration of environmental quality. However, with the implementation of general control measures as well as species-specific mitigation measures, residual impacts of the construction phase are predicted to be minimal.

For many threatened raptor species worldwide, electrocution by powerlines is considered to be the number one conservation threat contributing to population decline. In particular, larger-bodied birds which tend to prefer perching at high altitudes have the highest risk for electrocution. As there are a number of susceptible species including the critical Egyptian Vulture, the significance of unmitigated bird OHTL electrocution impact was found to be major.

However, OHTL design interventions are proposed including the use of appropriate insulators as well as adequate spacing of the live components. These are highly effective mitigation measures; thus, the residual significance is negligible to minor.

Thin, dark wires used in overhead transmission lines are visually difficult to detect. Particularly at risk are birds migrating between 20-50m altitude, birds flying at night, birds flying in flocks, and / or large and heavy birds of limited manoeuvrability. Unmitigated OHTL collision risk of various bird species was predicted to be of major to moderate impact significance.

A Potential Biological Removal (PBR) Analysis was undertaken to determine the thresholds for acceptable levels of annual losses due to the project. The Post-Construction Fatality Monitoring Plan (PCFM) will also include intensive carcass searches along the OHTL route and mortality rate calculations for OHTL collisions.

Houbara Bustards are known to be susceptible to OHTL collision. The Biodiversity Action Plan (BAP) provides the strategy for No Net Loss (NNL) for PBF species and Net Gain (NG) for the CH species, Asian Houbara. The Compensation Offset Plan details the offset measures that will be implemented for the Asian Houbara if the PCFM exceeds the PBR thresholds.

Given the implementation of mitigation measures such as inclusion of bird visual diverters, the residual significance is down listed to minor.

Sensitive bird receptors may be cumulatively affected by the presence of multiple regional wind farms operating simultaneously. As appropriate design essentially eliminates

electrocution and vastly reduces collision risk, the residual project-specific cumulative effects given appropriate design would be negligible.

5.2 Ambient Air Quality

5.2.1 Wind Farms & OHTL

Temporary activities may result to dust generation and gaseous emissions on local receptors near the Wind Farms, OHTL and associated access roads. Such impacts are expected to be minor in significance and will be managed through the implementation of the Projects specific CESMPs.

Cumulative impacts on air quality with respect to dust generation and gaseous emissions along the access road leading to the site will occur due to transportation of Projects' materials happening at the same time. These impacts are expected to be minor with the implementation of the management practices in the ESIA and its Addendum.

The operation of the projects is not expected to result in impacts to air quality as there will be no permanent fuel combustion requirements except for the use of vehicles for operation and maintenance works at the Wind Farm and along the OHTL. Emission from vehicles during operation will be minor and unlikely to result in a discernible impact at receptor locations. No cumulative impacts on air quality are expected from the operation of the WFs.

Potential impacts relating to decommissioning of the wind farms will be managed through the implementation of a Decommissioning Management Plan, with specific relevance to working methods and regulations that may be applicable at this time

5.3 Noise and Vibration

5.3.1 Wind Farms & OHTL

Construction Phase

Temporary construction noise & vibration are expected to arise from the construction at the WFs and OHTL route and the use of access roads. These impacts are expected to be in the range of receptors along the access road, herder shelters near the Wind Farms and the agricultural and commercial receptors along the OHTL. However, the impacts on these receptors have been assessed as negligible to minor and will be managed through the implementation of the CESMPs.

Local communities may experience cumulative noise impacts if the Bash 52MW accommodation facilities are located near the villages as those of Bash 500MW WF. These

impacts are anticipated to the of minor significance with the implementation of the ESIA management and monitoring requirements.

Operational Phase (Wind Farm)

The Projects' primary noise impact are expected to relate to the operation of the wind turbines as noise will be generated from a number of different mechanisms grouped into mechanical and aerodynamic sources. Operational noise impacts have been assessed using modelling suite IMMI2020 in order to evaluate noise emissions from the wind farm at the nearest noise sensitive receptors. The outcome of the preliminary noise model identified twelve (12) receptors that exceeded the 35dB L_{A90} noise threshold established guidelines, hence requiring detailed modelling in accordance with the ISO9613 methodology.

Bash 500MW WF

After an appropriate amount of background noise data had been collected at four locations, a regression analysis was conducted and following the regression analysis, the derived noise levels were calculated in accordance with the Institute of Acoustics guideline. The derived noise level was compared with the predicted noise levels from wind turbines at 10m/s at the receptor locations and the result showed that noise contributed from the WTGs is significantly higher at R5 & R18 (59.4dB(A) & 52.1dB(A) respectively) than the day and night-time background noise of 53dB(A) and 43 dB(A)) respectively. Whereas noise contributed from the WTGs at R6 and R21 are all higher (45.2dB(A) and 48.5dB(A) respectively) than the night time background noise (43 dB(A)).

R5, R6, R18, and R21 are residential structures located within the Project site and used by herders therefore the sensitivity of these receptors is considered to be 'High'. Given the high sensitivity of these receptors, they were moved to suitable relocation sites (outside of the Project boundary) in accordance with the Bash 500MW WF Resettlement Action Plan.

Bash 52MW WF

The noise assessment undertaken as part of the Bash 52MW WF demonstrate that all receptors comply with the initial IFC guideline value of 35 dB $L_{A90,T}$ as well as WBG/IFC General Guidelines and the Uzbekistan national guidelines.

Cumulative Impacts

The cumulative impacts of the Bash 500MW + Bash 52MW WFs show that the additional turbines under Bash 52 do not have an influence on the Bash 500MW WF compliance assessment as the noise increases are less than 0.4dB at the nearest receptor.

Potential impacts relating to decommissioning will be similar to those encountered during the construction phase. As such, it is assumed that the risk of increased noise level associated with

the construction phase will be expected for the decommissioning phase at permanent receptor locations.

Operational Phase (OHTL)

No significant noise impact is expected to receptors during the operational phase of the OHTL and potential noise related to Corona effect is expected to be decrease with distance. Based on this, corona effect is not anticipated to be discernible at nearest residential household to the OHTL route which is approximately 250m away.

Potential impacts relating to decommissioning of the OHTL will be similar to those encountered during the construction phase and these will be managed through the implementation of the Decommissioning Management Plan.

5.4 Soil, Geology, Groundwater and Surface Water

5.4.1 Wind Farms & OHTL

During construction, impacts on soil and groundwater could arise from a number of activities. These include excavation and soil compaction, accidental spills or leaks, disposal of wastewater and inadequate management of waste. Since groundwater was not encountered at the Projects site, it is not expected that any contamination will reach groundwater.

The construction of the Bash 52MW & Bash 500MW WFs at the same time, could potentially contribute to an increase in soil pollution especially in shared Projects' areas such as the batching plant. However, no impacts are expected with the implementation of the applicable mitigation, management and monitoring measures. Soil impacts (if any) will be localised while the likelihood of groundwater pollution/contamination is considered to be unlikely as it is expected to be very deep.

Specific project impacts to soil, groundwater and geology are not expected during the operational phase of the Wind Farms and the OHTL. Potential risks of concern during the operational phase are expected to be limited to the management and storage of the very small quantities of materials/wastes/wastewater, chemicals and fuels. With the provision of the mitigation measures recommended in the ESIA (and its Addendum) and associated Waste Management Plans, no significant environmental impacts are envisioned for the Wind Farms or the OHTL. No cumulative impacts are expected during the operational phase of the WFs.

Potential soil & groundwater impacts relating to decommissioning of the wind farms will be similar to those encountered during the construction and operational phase and will be managed though the implementation of a Decommissioning Plan.

5.5 Water Environment

5.5.1 OHTL

There are areas of salt marshes and agricultural fields with irrigation channels located along the OHTL alignment. The potential impacts to surface water quality during the construction phase relate to obstruction of flow of irrigation channel to neighbouring agricultural lands and contamination of irrigation water. Such potential impacts will be managed through a robust Construction Environmental & Social Management Plan (CESMP) in accordance with the provisions set out in the ESIA.

Operational phase impacts will be limited and will relate to maintenance sections of the OHTL and may include accidental spills & leaks. Any potential risks to surface water & irrigation channels will be managed and mitigated via the effective implementation of an Operational Environmental & Social Management Plan (OESMP).

Potential impacts relating to decommissioning of the OHTL will be similar to those encountered during the construction phase and will be managed through the implementation of a Decommissioning Plan.

5.6 Electro Magnetic Field

5.6.1 OHTL

The operation of the 500kV OHTL will be a source of electric and magnetic fields (EMF) which are invisible lines of force that surround any electrical device such as power lines. The impact on receptors is anticipated to be negligible given that human settlements are located well away from the OHTL route and outside of the legally required Health Protection Zone (HPZ) of 30m.

The only potential risk of exposure relates to herders, farm workers and commercial enterprises working directly or with structures within the 30m HPZ including operational phase maintenance workers. It is noted that individuals with structures within the 30m HPZ will be resettled through the implementation of the Project specific RAP while impacts to the OHTL maintenance workers will be managed through the preparation and implementation of an EMF safety program.

Note: *No EMF impacts are expected during the construction nad decommissioning phase of the OHTL because there will be no transmission of power.*

5.7 Traffic and Transportation

5.7.1 Wind Farms & OHTL

Wind turbines and OHTL components will be manufactured abroad and transported to the Projects site by road from either Dulata, Khorgos or Alanshankhou borders in China and from either of these borders to custom points at Nur Zholy/ Kolzhat/Yallama in Kazakhstan and thereafter to the site. As such, appropriate roads are needed for site and OHTL access and the hauling of equipment turbines and OHTL components. If improperly planned and managed, the trailers hauling the heavy Project components can potentially damage the existing highways, bridges, overpasses, roads, utilities, local access roads and other structures.

Construction activities will also result in an increase of the numbers of movements of HGVs and other vehicles for the delivery of heavy plant, equipment, materials, and transportation of Projects' staff.

The construction activities for the Bash 52MW WF, Bash 500 and Dzhankeldy 500MW (also an ACWA Power project under construction) will overlap and shared routes for transportation of construction materials and personnel will lead to increased transportation activities. This may lead to congestion in specific areas or placing of physical stress on existing road infrastructure. In addition, the Bash 500MW & Bash 52MW EPC Contractors will utilise the same access road into the Project site which can result to damage on the road and thus impede access to other road users. As such, close coordination will be required between both Projects and with the road transport authorities to manage the transport of materials for the Projects. This will include the preparation and implementation of a Joint Traffic and Transportation Management Plan. In addition, a joint road safety campaign will be implemented in local schools and communities near the Wind Farms and access roads in order to raise awareness on the safety risks involved with increased traffic.

The number of vehicles during the operational phase are likely to be low, with access required for maintenance and servicing. It is expected that the majority of these vehicles will be light vehicles with HGVs only required in instances where WTG, OHTL components need to be replaced. No cumulative impacts are expected as a result of operating the WFs at the same time as they will both be managed by the same team.

5.8 Infrastructure and Utilities

5.8.1 Wind Farms & OHTL

There are existing infrastructure & utilities within the Projects site and along the OHTL. These include existing OHTLs, gas pipelines, railway line, railway station and communication lines. The construction phase of the Wind Farms and OHTL may lead to potential damage of this

infrastructure thus resulting to disruption of services. In order to mitigate against this, the EPC Contractors will be required to conduct a risk assessment, adhere to all relevant construction buffer zones, obtain necessary permits and ensure on-going stakeholder consultations with the relevant agencies operating the infrastructure.

Erection of WTGs can present a physical obstruction to aircrafts and also cause radar and other navigational aid interference where the blades appear as 'clutter' on radar screens and can be mistaken for aircraft. The nearest airport to the Bash site is the airport in Navoi which is 60km south east of the site. As such the Projects are required to continue with consultations with the Civil Aviation Authority and obtain a permit for the Projects.

No cumulative impacts are expected as the Projects will be required to adhere to the buffer zones established including the implementation of the mitigations in the ESIA.

5.9 Archaeology and Cultural Heritage

5.9.1 Wind Farms & OHTL

There are known archaeological sites within the Wind Farms based on surveys undertaken by the Institute of Archaeology between 28th May to 21st June 2021. As a result, and in compliance with the Agency of Conservation of Cultural Heritage, buffer zones between archaeological sites have been established which include 100m for complex relief areas and 50m for flat relief. It is noted that there are no known archaeological sites along the OHTL alignment. In addition to the known archaeological sites, there remains potential to uncover previously buried archaeology (chance finds) within the Wind Farms and OHTL footprint during the construction phase.

Impacts to intangible cultural elements for communities living near the Wind Farms and OHTL are expected to be minor and will be managed through the implementation of a Worker's Code of Conduct which will include measures relating to respect of local beliefs, customs, rituals and their general way of life.

Any cumulative impacts from the construction phase of the Bash 500MW & Bash 52MW WFs on known and unknown archaeology sites are not expected to be significant. Any impacts from these two Projects will be managed through the implementation of the ESIA and Cultural Management Plan(s) and a Chance Find Procedures. In addition, the EPC Contractors will be required to recruit an archaeological expert for both Projects or engage an archaeologist from a University to visit the sites regularly.

During the operational phase of the Wind Farms, there will be no further excavations at the Projects site and as such, there is no risk of uncovering an item of archaeological importance at this stage. However, a Cultural Management Plan will be developed as part of the

operational ESMS to include procedures to be implemented in ensuring protection of the archaeological sites. No cumulative impacts on archaeology are expected during the operational phase of the Projects.

Any impacts on archaeological sites and cultural heritage during the decommissioning phase will be managed through the implementation of a Decommissioning Management Plan and in consultation with the with the Institute of Archaeology and the National Centre of Archaeology.

5.10 Landscape and Visual Amenity

5.10.1 Wind Farms

LANDSCAPE

The development of the wind farms will include levelling, grading, construction of administrative buildings, erection of WTGs and many more activities which will transform the landscape in the area into a 'Desert with Wind Turbines' landscape character as large vertical rotating features will be added into the landscape. The installation of towers, turbines, and the shape or colour will result in visual intrusion at receptor location in proximity to WTG areas.

The cumulative impacts from the erection of 8WTGs will have a very minor impact since they will be located in the same area as the 79WTGs under Bash 500MW. However, this landscape change will be permanent for the Project lifetime.

In addition, the use of lighting across the site in an environment classified as 'Rural/suburban transition site' during construction phase will introduce some limited light & spill & glare in a night time haze likely to be visible for several kilometres from the projects area. However, the cumulative impact will be temporary. Any impacts (from both Projects) from lighting are anticipated to be minimised by limiting works being undertaken during the night and by the implementation of specific controls detailed in the CESMPs on-site.

VISUAL

The continuous movement of the wind turbine rotors will also result in changes to the visual envelope of receptors overlooking the Projects site as there would be loss of static landscape view. This will especially impact the herders with structures near the Projects site (outside of the Projects boundary).

5.10.2 OHTL

Given that majority of the OHTL route is mostly flat gravel plain, excavation, levelling, grading and other site preparation activities may result in limited land use changes. The subsequent

erection of pylons/ towers will result in large anthropogenic intrusions into the landscape transforming the landscape of the OHTL route. Such intrusions of large-scale vertical structures will likely result in minor but noticeable landscape character impacts.

Impacts to the visual envelope of surrounding receptors will also occur at night where the addition of lighting during construction will illuminate the OHTL construction area that has previously been free of any light sources. Similar to the wind farm, any impacts from lighting are anticipated to be minimised by limiting works being undertaken during the night and by the implementation of specific controls detailed in the CESMP on-site.

5.11 Shadow Flicker

5.11.1 Wind Farms

Shadow flicker is the effect of the sun shining through the rotating blades of a wind turbine and casting a shadow on the window of neighbouring properties under certain wind & light conditions. In order to assess the effect of shadow flicker on nearby sensitive receptors during operation of the Wind Farms, Shadow flicker modelling was undertaken for the Wind Farms. The modelling study considered two (2) scenarios; a conservative worst-case approach based on the requirements outlined in IFC EHS Guideline for Wind Energy and a more realistic approach to consider actual site conditions.

BASH 500MW WF

The modelling predicted that under worst-case scenario the herder structure located north west of the site (R5 & R6) and the structure used by herders located south-west of the site (R18) all of which are within the Project site and R21 which is located outside the project boundary will experience shadow flicker which exceed the IFC recommended limit of 30 hours per year or 30 minutes per day. However, it should be noted that the worst-case scenario provides an over estimation of the duration of shadow flicker occurrence at the receptor location. The modelling also predicts exceedance in IFC recommended limit in the real case scenario for R5, R18, and R21. However, it should be noted that the realistic scenario has not considered screening. Other receptors will not experience shadow flicker that exceed the limit of 30 hours per year established by IFC EHS Guideline for Wind Energy.

Based on the results obtained from the shadow flicker assessment (and other impacts relating to land use), the herders within the Wind Farm have been resettled to suitable alternative land in accordance with the Bash 500MW WF RAP.

BASH 52MW WF

The shadow flicker modelling assessment for Bash 52MW WF show that all receptors will not experience shadow flicker that exceed the threshold of 30 hours per year as established by

IFC EHS Guideline for Wind Energy for worst case scenario and the IFC recommended limit for real case scenario.

CUMULATIVE IMPACT (BASH 500MW + BASH 52MW WFS)

Cumulative shadow flicker assessment also demonstrate that all receptors comply with both the IFC criteria (30 hours per year or less than 30min per day) for the WBG/IFC worst-case scenario as well as the realistic scenario.

5.12 Socio-Economics

5.12.1 Wind Farm & OHTL

STAKEHOLDER ENGAGEMENT – BASH 500MW WF

A number of stakeholder engagement activities have been undertaken as part of the ESIA process. The outcome of stakeholder consultations has been considered in the development of the ESIA and the Project specific Stakeholder Engagement Plan (SEP).

The draft ESIA was disclosed to local communities on 22nd to 25th February 2022 and the meetings were attended by local leaders, men and women (separate meetings were held for the women) and herders. Disclosure materials used included Power Point, brochures and leaflets which included the Project information and details of the grievance mechanism.

Based on the consultations and surveys undertaken, the main impacts anticipated by local communities include:

- Creation of job opportunities;
- Expectation that ACWA Power will invest in community projects;
- Improvement in the power supply and reduction in the cost of electricity;
- Concerns on the reduction of grazing land within the Wind Farm; and
- Impacts relating to noise and dust generation.

An ESIA Public Consultation & Disclosure Report[4] was prepared at the end of the 60 days EBRD disclosure period and 120 days ADB disclosure period. This report is based on the additional consultations and feedback undertaken during the disclosure period.

[4] Refer to table 1-1 for links to the Bash 500MW WF ESIA Public Consultation & Disclosure Report.

Additional consultations were also undertaken with land users (herders) using the Project site and along the OHTL (herders, farmers and commercial enterprises) as part of the RAP processes. The implementation of the RAP will mitigate against physical and economic displacement which is expected as a result of the Project and OHTL implementation.

STAKEHOLDER ENGAGEMENT – BASH 52 MW WF

The Bash 52MW WF undertook a targeted stakeholder consultation campaign based on the anticipated impacts of the Project (refer to the SEP for more details). These targeted consultations were undertaken during the preparation of the Addendum to the Bash 500MW ESIA outcomes of which are documented in the SEP.

At the end of 60 day EBRD disclosure period, a Public Consultation and Disclosure Report will be developed based on additional consultation and feedback undertaken during the disclosure period. This feedback report will then be disclosed on ACWA Power's website together with the ESIA package explaining the disclosure activities that have been undertaken, feedback received and whether/how these are addressed in the final ESIA and management plans.

SOCIAL ECONOMIC IMPACTS

The construction and operation of the Wind Farms and OHTL is expected to positively influence the local, regional and national economy i.e., through employment, direct procurement and supply of materials, increased power supply and contribute towards a low carbon economy.

Negative impacts relating to the construction phase will include labour risks such as poor working and living conditions, forced labour etc. There will also be potential risks associated with the supply chain relating to forced labour, child labour, health & safety etc.

Supply Chain Risk

A supply chain risk assessment for the Project was undertaken by SGS for Envision (Tier 1 – turbine OEM Manufacturer) and its suppliers. A total of 37 suppliers have been assessed and will supply WTGs components to both WFs (including other on-going ACWA Power WFs). The assessment by SGS outlined that:

- All suppliers meet the requirements of National laws & regulations;
- There is no evidence of "Zero Tolerance" such as child labour and forced labour for all suppliers
- The management and executive levels of the suppliers have an adequate understanding of the basic requirements of labour and working conditions according to national legislations.

- Majority of the suppliers have established related rules and policies, which defined some of the requirements of protecting employees and providing safe working conditions.
- The suppliers have carried out various training activities, to improve the awareness and ability of relevant personnel on protecting workers.

Although, the assessment identified Zero Tolerance to forced and child labour issues in Envision and its supply chain, a number of major non-compliance points which largely relate to inconsistencies in policies against the requirements and implementation practices, overtime issues, gaps in HSE processes, disciplinary and grievance mechanism or employee record-keeping systems were identified. Given the number of major non-compliances, the social risk risk related to supply chain is anticipated to be Moderate

Supply chain risks will be managed through the implementation of the approved Supply Chain Management Plan.

5.13 Solid Waste and Wastewater Management

The construction of the Wind Farms and OHTL will result in the generation of waste due to excavations, packaging waste and small quantities of hazardous waste. This will also include sanitary waste which will be contained in septic tanks prior to removal by a licensed wastewater contractor.

Since the construction phase of both the Bash WFs will overlap, the generation of liquid, solid and hazardous waste may potentially impose additional demands on existing waste management facilities in the area/region. These cumulative impacts will be managed through the implementation of the ESIA requirement. In addition, the Bash 52MW WF will undertake a capacity assessment of the waste facilities before the start of the construction phase.

During the operational phase, there will be relatively few waste streams, although maintenance waste may be generated in small quantities on a continued basis. The cumulative impacts from the operational phase of the WFs are expected to be insignificant and it will be managed by the same O&M team. The ESIA outlines the mitigation and management measures and the implementation of a Waste Management Plan.

During decommissioning of the Wind Farms, there is a potential for inert demolition waste and materials such as steel reinforced bars, broken concrete, cabling, transformer oils etc. to contaminate soils. The decommissioning of the Wind Farms provide significant opportunity for resource efficiency and material re-use/recycling. As such, a Decommissioning Plan will be developed to include detailed methods for re-use, recycling and disposal of decommissioning wastes.

5.14 Community, Health, Safety and Security

Public risks during the 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. The potential risks to communities will include safety, health and security risks, Gender Based Violence & Harassment (GBVH), Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH). These risks will be managed through the implementation of the mitigation measures in the ESIA and of appropriate plans, procedures and policies such as the Emergency Preparedness and Response Plan, Influx Management Plan, GBVH policy etc.

The construction period of the two WFs and the mining areas will coincide and as such, there will be an influx of workers which could lead to outbreak of diseases and illnesses, strain the public social services etc. Impacts relating to workers influx could lead to significant impacts if the required mitigations and management measures are not implemented.

Construction works could also increase the risk relating to public safety particularly in regard to use of high-powered equipment, machinery etc. However, impacts relating to safety and security will be site-specific and therefore the cumulative impacts are considered to be insignificant.

The operational phase of the Wind Farms will include various risks that could result in impacts to public safety. With regards to blade & ice throw from the wind turbine, the Project has adhered to a minimum distance of 200m from the local communities to the nearest wind turbine in accordance with the Agency for Sanitary and Epidemiology Welfare Health Protection Zone requirement '*to maintain a distance of 200m from wind turbines to limit any activities and people's presence during possible emergency periods under adverse weather conditions*. In addition, all of the WTGs are over 2km from the nearest local community and the local communities are not within the setback distance of approximately 278m & 407m for blade throw & ice throw respectively. As such, the likelihood/risk of blade & ice throw is anticipated to be negligible.

Other operational phase impacts relating to safety risks to children and young people trying to explore the WTGs or substation, OHTL and/or vandalising Project equipment/structures etc will be addressed through on-going awareness campaigns in local schools and communities.

It is expected that there will no cumulative impact from blade throw and ice throw from both WFs since they are located 2km from the nearest communities. In addition, no new structures will be built within the stipulated 1km health protection zone.

5.15 Labour & Working Conditions

Construction activities will generate a variety of occupational health and risk to the workforce. These will include physical risks such as traffic on site, working at height, movement of heavy

machinery, excavations, scaffolding etc. other risks may include handling of fuels, chemicals, paints and solvents, noise and emissions from machinery and generators etc. These will be managed through the implementation of an Occupational Health and Safety Management Plan (OHSMP) which will be prepared at the start of the construction phase.

In addition, there will be potential working condition and labour risks such as child labour, forced labour, poor accommodation facilities, restrictions for workers to join trade unions, GBVH, wage discrimination based on gender etc. To address these issues, a number of measures will be implemented to mitigate against these impacts such as the implementation of Human Resources Policies & Procedures, Human Rights Policy, GBVH Policy, Worker Code of Conduct and provision of a Worker Grievance Mechanism.

The Projects' related impacts on labour and working conditions will be specific to each Project based on the implementation of the required mitigation and management measures. As such, cumulative impacts between the Bash 500MW & Bash 52MW WFs are therefore not envisaged.

5.16 Influx Impact

In addition to the influx of workers in the area, the development of the Wind Farms and OHTL may result in the in-migration of other people seeking direct or indirect opportunities from the Project such as opportunistic in-migrants seeking jobs from the Projects, opportunistic traders aiming to take advantage of business opportunities encouraged by the Projects and by the increased income of the local community and other migrants seeking to take advantage of the economic and development opportunities created in the area.

This may result to social conflict, increased competition on public services, health risks (relating to spread of communicable diseases and sexually transmitted diseases), GBVH, disruption of local culture, increase in crime, local inflation etc.

However, due to the location of workers accommodation facilities within the Projects site, it is expected that workers and community interaction will be minimal and other impacts will be managed through the implementation of an Influx Management Plan, a Code of Conduct, Local Content Plan, Cultural Sensitization Training to guide staff on appropriate behaviour & interaction with local communities and purchase of goods & services.

The cumulative impacts of both WFs as a result of the worker influx will be similar to those identified under section 5.14 above.

5.17 Climate Affairs

Fuel combustion during the construction phase for diesel generations and mobile plant will results in GHG emissions, however, the primary operation of the Projects will lower the carbon

intensity of Uzbekistan's grid electricity and result in avoidance of CO_2 emissions. Fuel combustion from the use of operation vehicles and emergency diesel generators will be negligible. This will be in line with the Uzbekistan 2030 Energy Strategy to reduce reliance on fossil fuels and transition into a green economy.

The potential climate physical risk for the projects will include increase in temperature and increased flooding. However, the WTGs have been designed to operate in a wide range of temperature and it is not expected this will be a transition risk . In addition, the Wind Farms are also located in a very low risk flood area and flooding is not anticipated.

5.18 Cumulative Impacts

The ESIA and the ESIA Addendum have assessed cumulative impacts of several environmental and social parameters where applicable (e.g., biodiversity impacts), which have considered the measured baseline conditions in combination with the predicted projects contributions. The assessment is based on potential future impacts of the project in combination with other known and/future projects in the Projects' AoI. The cumulative impact assessment has been undertaken in accordance with the IFC guidelines details of which are provided in the sections above.

6 ENVIRONMENTAL & SOCIAL MANAGEMENT & MONITORING

Both the construction and operational phase of ESMS will need to incorporate mitigation and monitoring requirements established within Volume 2 of the ESIA and its Addendum as well as requirements set out by the MEEPCC and the Lenders.

Volume 3 of the ESIA provides a framework for the development of the Environmental and Social Management System (ESMS) for the construction and operational phases of the Projects. The framework has been developed to ensure that all Environmental & Social impacts identified for both construction and operational phases are appropriately identified and controlled through the development of a robust construction and operational phase ESMS. ACWA Power has developed an ESMS Implementation Manual for the Project Companies to ensure there is sufficient oversight of contractors and operators and ensure compliance, risk and opportunity management including monitoring.

In addition, there will be dedicated competent Project teams put in place by the EPC Contractors and the O&M Company overseen by the Projects Companies to ensure the implementation of the E&S mitigation measures.

The primary documents guiding the environmental and social management of the construction and operational phases will be the Environmental and Social Management Plans (ESMP) respective to construction and operational risks, impacts and compliance requirements.

6.1 Independent Auditing and Monitoring

The Projects will be subject to periodic independent monitoring in accordance with the requirements of the lenders Environmental and Social Action Plan (ESAP) and an Equator Principle Action Plan (EPAP) if the Projects are financed by institutions signatory to the Equator Principles. The scope of the independent audits will include the implementation of the projects ESMS and will evaluate on-site activities and documented controls and monitoring efforts, with respect to the Projects' compliance obligations.

APPENDIX A – PROJECTS CONTACTS INFORMATION

Table A-1 Projects Contacts Information

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