

Non-Technical Summary (NTS)

**300 MW / 600 MWh Zarafshan BESS Project in
Uzbekistan**



REV-2

September 2026

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ABBREVIATIONS AND ACRONYMS

Acronym	Definition
AIIB	Asian Infrastructure Investment Bank
Aol	Area of Influence
BESS	Battery Energy Storage System
BMS	Battery Management System
BSSA	Battery Storage Service Agreement
COD	Commercial Operation Date
E&S	Environmental and Social
EHS	Environmental, Health and Safety
EMS	Energy Management System
EPC	Engineering, Procurement and Construction
EPRP	Emergency Preparedness and Response Plan
ESAP	Environmental and Social Action Plan
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
FGD	Focus Group Discussion
GBVH	Gender-Based Violence and Harassment
GIIP	Good International Industry Practice
GoU	Government of Uzbekistan
HSSE	Health, Safety, Security and Environment
HSSE-MS	Health, Safety, Security and Environment Management System
IFI	International Financing Institution
KBA	Key Biodiversity Area
LFP	Lithium Ferrous Phosphate
LWCMP	Labour and Working Conditions Management Plan
MoE	Ministry of Energy
MW	Megawatt
MWh	Megawatt-hour
NEGU	National Electric Grid of Uzbekistan
NMMC	Navoi Mining and Metallurgical Company
NTS	Non-Technical Summary
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
PCS	Power Conversion System
SCADA	Supervisory Control and Data Acquisition
SEAH	Sexual Exploitation, Abuse and Harassment
SEP	Stakeholder Engagement Plan
TBT	Toolbox Talk
WBG	World Bank Group

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1. INTRODUCTION

In recent years, Uzbekistan has faced a severe energy crisis and is going through a power system collapse – particularly during winter. The problem has affected every part of society, from businesses and industry to residents' daily lives. In December 2022, extremely low temperatures coupled with outdated infrastructure created pressure drops in the gas pipelines, which in turn created a big national crisis given that 80% of Uzbekistan's electricity comes from thermal power facilities that run on gas. The crisis has resulted in severe power outages with nation-wide blackouts¹.

Acknowledging the severity of the situation, the Government of Uzbekistan has taken ambitious measures to alleviate the energy crisis. One of the first priorities was to reduce reliance and dependency on natural gas for electricity generation and promote renewable energy sources such as solar and wind power.

The Government issued a Decree of the President of the Republic of Uzbekistan dated 11.09.2023 No. PF-158 ("Uzbekistan - 2030" Strategy), which sets a target of 25 GW of renewable energy capacity and 40% of electricity production from renewables by 2030².

These national efforts to expand renewable energy make the role of Battery Energy Storage Systems (BESS) increasingly important. The primary purposes of the BESS are energy shifting and grid support, both of which play a critical role in facilitating the integration of renewable energy into Uzbekistan's power grid by shifting the energy load to peak demand periods, therefore reducing blackouts.

In accordance with the above, Abu Dhabi Future Energy Company – Masdar executed an Investment Agreement with the Republic of Uzbekistan, a Battery Storage Service Agreement ("BSSA") with JSC Uzenergosotish, Uzbekistan's state-owned joint-stock company, to develop a 300 MW / 600 MWh Battery Energy Storage System (BESS) Project to be located in Navoiy Region within Uzbekistan along with an Underground Transmission Line (hereafter referred to as the '**Project**'). Masdar established a Special Purpose Vehicle (SPV) known as Zarafshan Energy Storage Foreign Enterprise Limited Liability Company (LLC) that is wholly owned by Masdar and that will be responsible for development of this project (hereafter referred to as the '**Developer**').

This document, the Non-Technical Summary (NTS), provides a summary in non-technical language of the findings presented in the Environmental and Social Impact Assessment (ESIA) Report. The NTS summarizes the Project, the baseline Environmental and Social (E&S) conditions identified during the assessment process, the key potential E&S impacts associated with the Project, and the measures proposed to avoid, minimize, mitigate, or manage such impacts. The assessment has also informed the development of an Environmental and Social Management Plan (ESMP), which establishes the mitigation, monitoring, management, and reporting measures that will be implemented throughout the Project lifecycle. The Developer is committed to implementing these measures and monitoring their effectiveness.

A Stakeholder Engagement Plan (SEP) has also been developed, setting out the stakeholder engagement approach for the Project, planned consultation activities, methods for information disclosure, and a grievance mechanism through which stakeholders can raise concerns, complaints, or grievances related to the Project.

¹ [Executive summary – Uzbekistan 2022 – Analysis - IEA](#)

² [Decree of the President of the Republic of Uzbekistan dated 11.09.2023 No. PF-158](#)

1.1 How the Project is Assessed

The Project is seeking financing from international financing institutions. The Asian Infrastructure Investment Bank (AIIB) is the main financing institution for the Project, and its Environmental and Social Framework is the main international standard that the Project must meet. The Project has also been designed and will be managed in line with the International Finance Corporation Performance Standards, the Equator Principles, and the World Bank Group environmental, health and safety guidelines.

AIIB has classified the Project as Category B. This means that the potential negative environmental and social effects of the Project are limited in number, mostly confined to the Project site, and mostly reversible, and that they can be managed through the measures set out in the ESIA and the ESMP. This classification is separate from the national classification of the Project as Category 1 under Uzbek law.

As part of the assessment, the Project was checked against each of AIIB's three environmental and social standards. The outcome is summarized below.

- Environmental and Social Assessment and Management applies to the Project. The Project may create environmental and social effects that need to be assessed and managed. This is addressed through the ESIA and the ESMP.
- Land Acquisition and Involuntary Resettlement does not apply. The Project is located on State land that is not leased to anyone, and no people are using the land formally or informally. Nobody will lose their home, land, assets or income because of the Project.
- Indigenous Peoples does not apply. No groups meeting the definition used by AIIB are present in the Project area.

The Project is also required to comply with Uzbek law as a minimum. Where Uzbek law is less strict than the international requirements, the stricter international requirement is applied.

1.2 Consultation and Engagement with Stakeholders

Consultation with government bodies, local authorities, the local community and other interested organizations was carried out throughout the preparation of the ESIA. This included meetings with national and regional authorities, discussions with the Muruntau community, a public hearing, and consultations with specialist organizations on biodiversity and cultural heritage.

The issues most frequently raised by the local community related to employment opportunities, the safety of the battery facility including the risk of fire, community support initiatives, waste management, and how residents can raise concerns. These issues have been taken into account in the ESIA and are reflected in the measures described in this NTS.

Particular attention was given to including groups who may find it harder to take part, including women, young people, elderly people and people with disabilities. Meetings were announced in advance through local channels, materials were provided in Uzbek, meetings were held in Uzbek and Russian, and representatives of women's groups were specifically invited. Consultation was also undertaken with the Family and Women's Affairs Department. During the community meeting, a separate discussion was held with women attendees about education support and employment opportunities.

A specialist bird conservation organization, the Uzbekistan Society for the Protection of Birds, was also consulted. The Society confirmed that the Project will not significantly change the landscape or natural conditions of the area and provided recommendations which were taken into account in the biodiversity assessment.

1.3 Disclosure of Information

The ESIA, the NTS and the SEP will be made available to the public. The NTS and SEP will be available in English, Uzbek and Russian, and the ESIA will be available in English. The documents will be available for a period of 30 days on the Developer's website and in hard copy at Muruntau Mahalla, Tomdi Khokimiyat and Zarafshan Khokimiyat.

The disclosure will be announced through notices and advertisements with Zarafshan and Tomdi Khokimiyat and the relevant Mahallas, and through the Muruntau Mahalla Telegram channel. Anyone wishing to comment during this period may do so through the project's HSSE manager or through the grievance mechanism described below.

1.4 How to Raise a Concern or Complaint

The Developer operates a grievance mechanism so that anyone can raise a concern or complaint about the Project. It is open to all stakeholders, including local community members, government bodies, non-governmental organizations, media and academic institutions. It covers concerns about Project activities as well as about the conduct of the Developer, the contractor, subcontractors and suppliers. Concerns can be raised in the following ways.

- By completing a grievance form and placing it in a grievance box. Forms and boxes are available at the Project Office, the Muruntau Village Local Unit Office and Tomdi District Khokimiyat.
- By contacting the project's HSSE manager directly by telephone or email.
- Through the Developer's website.

A notice explaining how and where to raise a concern will be displayed at key locations so that everyone knows how to use the mechanism. All concerns are recorded. Receipt is confirmed within 7 working days, using the method of contact the person prefers. The HSSE Manager looks into the matter, identifies what needs to be done, and provides a written response within 30 days. The mechanism covers matters relating to the Project. Concerns that are not connected to the Project or to the people working on it fall outside its scope. Where this happens, the person will be told and given the reason.

If a person is not satisfied with the response, the matter is raised with the Project Manager and, if needed, with the Developer's head office and senior management. If it still cannot be resolved, the person will be informed about other options available to them, including those of the relevant authorities or the financing institutions. Using the grievance mechanism does not prevent anyone from going to court.

The mechanism is free of charge and no one will suffer any disadvantages for raising a concern. Anyone may ask for their name to be kept confidential, and complaints can also be submitted anonymously.

Special arrangements apply to complaints relating to gender-based violence, sexual harassment and sexual exploitation and abuse. These follow internationally recognized good practice. The person receiving the complaint is trained by a specialist service provider, no identifying information about the person affected is recorded, the person is referred to specialist support services, and no action is taken without their agreement.

Workers on the Project have their own separate way of raising concerns, which is set out in the Labor and Working Conditions Management Plan.

2. PROJECT DESCRIPTION

This section provides a description of the Project in relation to its location, the key Project components, and an overview of the proposed activities that are to take place during the construction, operation, and decommissioning phase.

2.1 Administrative Setup and Project Location

It is important to understand the administrative setup of Uzbekistan as several terminologies will be referenced throughout the NTS. Administratively, Uzbekistan is divided into 12 Regions (also known as *viloyatlar*), 1 sovereign republic (known as the Sovereign Republic of Karakalpakstan), and 1 independent city (Tashkent City which is the capital of Uzbekistan).

The Project site is located in Tomdi District in Navoiy Region located in the central north/northwest of Uzbekistan. The site covers an area of approximately 10 hectares, together with a 788 m underground transmission line connecting the onsite substation to the existing Muruntau substation. The coordinates of the Project site boundary and of the underground transmission line route are provided in the ESIA. It is important to note that the area covered by the Project site and the transmission line represents the area where physical works will take place. The area studied in the ESIA is wider than this, because some effects, such as noise or traffic, can be felt beyond the site itself. For each topic assessed, an appropriate study area was defined.

Table 1: Region Division of Uzbekistan

Division	Legend	Division	Legend	Division	Legend
Andijan Region	2	Qashqadaryo Region	8	Xorazm Region	13
Bukhara Region	3	Samarqand Region	9	Namangan Region	6
Fergana Region	4	Sirdaryo Region	10	Navoiy Region	7
Jizzakh Region	5	Surxondaryo Region	11	Tashkent Region	12
Karakalpakstan	14	Tashkent City	1		

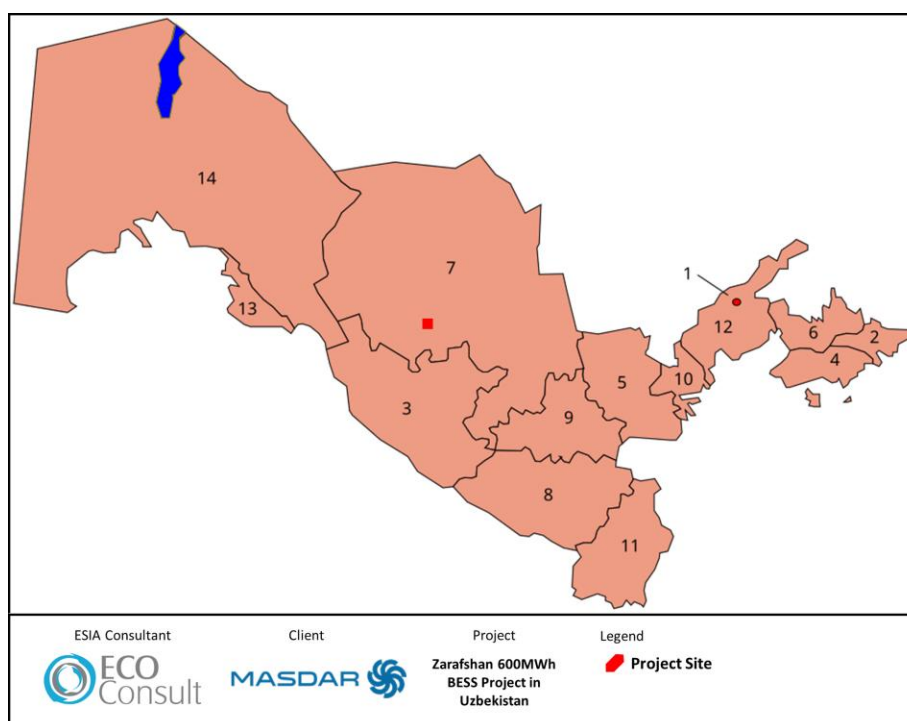


Figure 1: Region Division of Uzbekistan

At the highest level, each Region is led by its own regional administration (the ***Regional Khokimiyat***), headed by a Governor (the ***Regional Khokim***), who is appointed by the President of the Republic of Uzbekistan and serves for five consecutive years. The Regional Khokim is responsible for regional administrative governance, economic growth and infrastructure development, and supervises social services such as healthcare and education. Regional departments of national ministries are also present in Navoiy Region, including the Committee on Ecology and Climate Change of Navoiy.

Navoiy Region is divided into eight Districts (known as ***Tumani***), each with its own local administration (the ***District Khokimiyat***), led by a Mayor (the ***District Khokim***). The District Khokimiyat supervises the administration as a whole, including social services such as education and healthcare, and municipal services such as water distribution and waste management. The Project site is located in Tomdi District.

Table 2: District Divisions of Navoiy Region

District Name	Legend	District Name	Legend
Konimex District	1	Karmana District	5
Qiziltepa District	2	Nurota District	6
Xatirchi District	3	Tomdi District	7
Navbahor District	4	Uchquduq District	8

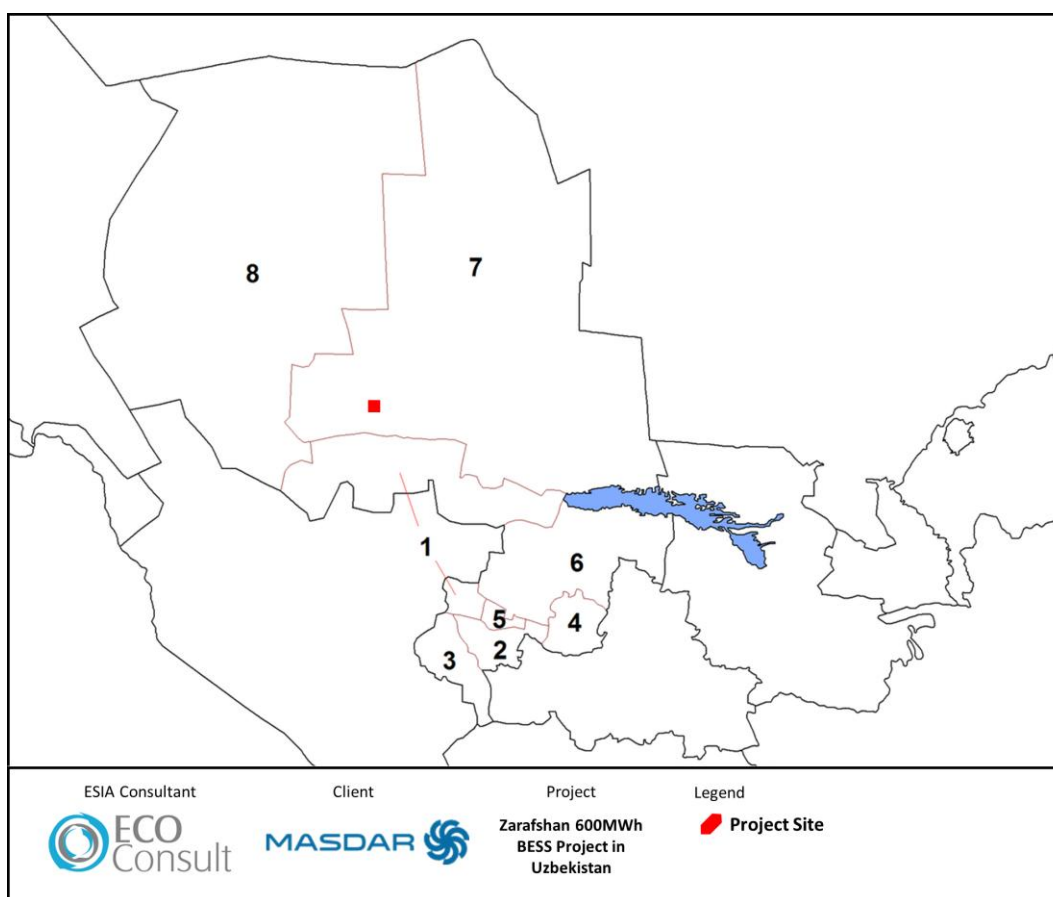


Figure 2: District Divisions in Navoiy Region

2.2 Local Communities

Throughout this NTS, the term ‘local community’ refers specifically to the Muruntau settlement in Navoiy Region, which is administratively part of the city of Zarafshan. Muruntau is the closest local community to the Project site, located approximately 12 km north-east of the Project area.

Other settlements within Tomdi District, including Tomdibuloq, are located at a considerably greater distance from the Project site, with Tomdibuloq located approximately 33 km away. Given this distance, such settlements are considered less likely to experience physical impacts. Muruntau is therefore considered the relevant local community for the Project, particularly in relation to possible temporary worker influx, use of local services, and interactions between the Project workforce and the nearby community.

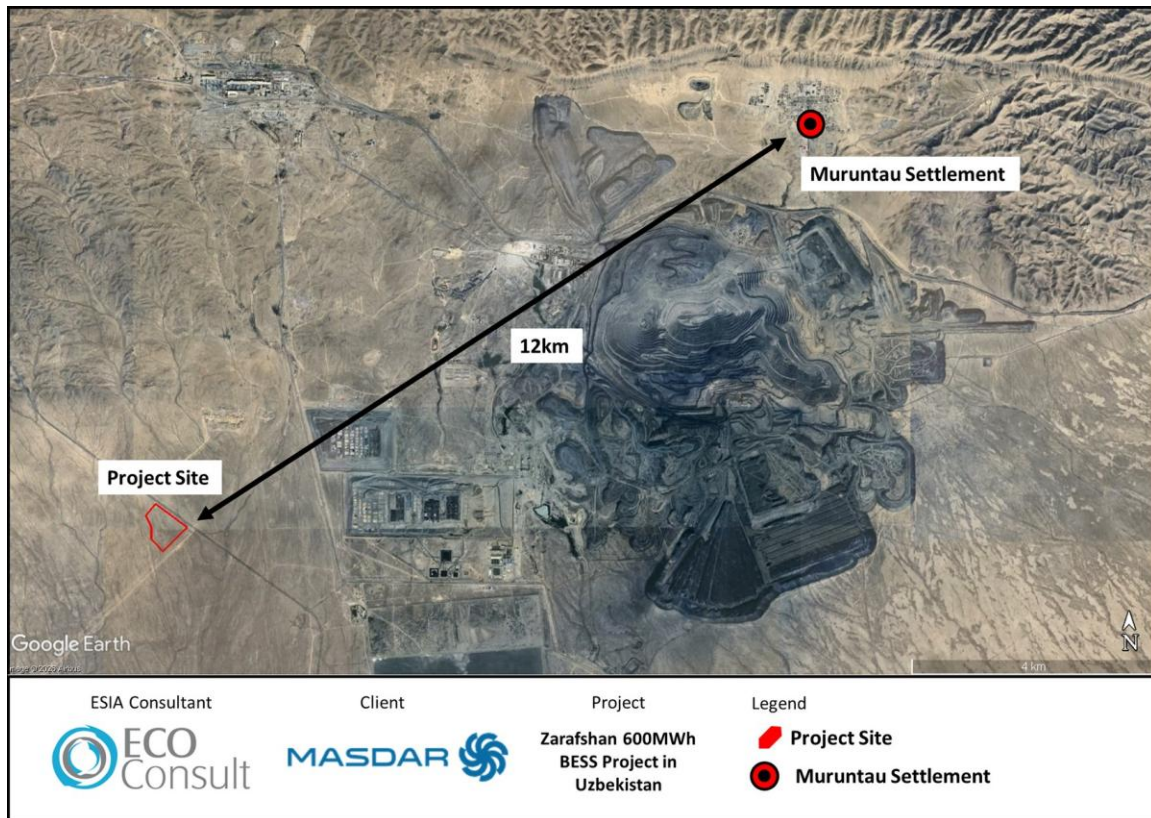


Figure 3: Project Site and Closest Community

2.3 Project Components

2.3.1 Outline of BESS Technology

The BESS will charge from the electricity grid when supply is high or demand is low and discharge stored electricity when grid demand increases. Electricity is stored as direct current in the battery modules. Power conversion equipment converts it between direct current and alternating current, and transformers increase the voltage before electricity is transferred to the grid.

To perform these functions, the Project will comprise the following main components:

- Containerized LFP battery enclosures. Each 20-foot enclosure is rated at around 5.016 MWh and contains battery cells, packs and racks, together with monitoring, cooling and safety systems.
- Power Conversion System units for two-way conversion between direct and alternating current. The available design information specifies 1,000-1,500 V direct current, 690 V alternating current and 98.5% charge/discharge efficiency.
- Low-voltage/medium-voltage transformers, switchgear, protection and isolation equipment, and an onsite substation.
- Energy Management System, Battery Management System, SCADA and communications systems for 24-hour remote monitoring and control.

- Liquid cooling/heating for battery enclosures, forced-air cooling for PCS units, fire and gas detection, container-level suppression, explosion-relief venting, physical separation/firebreaks and onsite fire-water storage.

2.3.2 Choice of Battery and Cooling Technology

Several battery technologies are available for facilities of this type. The Project reviewed the main options, comparing how much energy they store, how long they last, how much they cost, and how safe they are. Lithium Ferrous Phosphate (LFP) was selected because it offers the best overall balance of cost, lifetime and safety for a facility of this size, and because it is the most widely used technology for large-scale battery storage worldwide. It also has a high resistance to overheating compared with some other battery types.

The batteries need to be kept at a stable temperature. The Project will use a liquid cooling system. The cooling liquid circulates in a closed circuit inside each battery container and is not released to the environment. The containers arrive from the factory already filled with the cooling liquid, and any top-up needed during maintenance is delivered to site ready-mixed. This means the Project does not need to take any water from local sources for cooling. Options using air cooling were also considered but were found to perform less well in the hot conditions of the Project area.

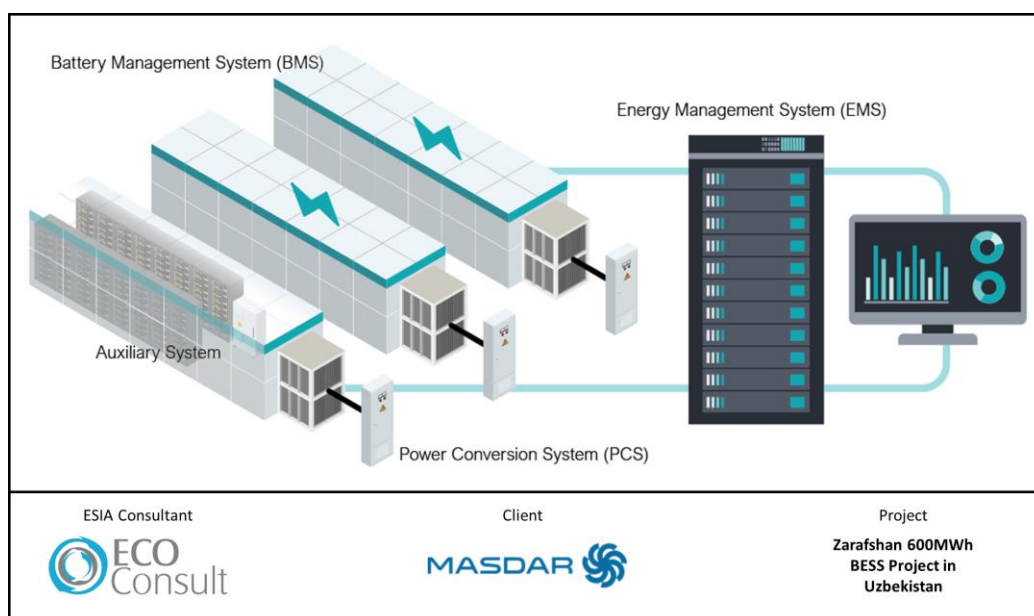


Figure 4: BESS Key Components

2.3.3 Infrastructure and Utilities

The following highlights the key infrastructure and utility elements that will be required for the Project.

- Substation (including associated civils works and buildings): A 200kV substation will be built within the Project site to manage the output from the BESS facility. It will include the necessary equipment to prepare the electricity for export to the grid.
- Grid Connection: this includes offsite connection works from the onsite substation to the existing Muruntau Substation through an Underground Transmission Line with a length of 788 m. The Developer will be responsible for preparing the detailed design (including identification of the route), construction activities after which it will be handed over to NEGU for operation and maintenance.

- **Amenities Building:** Utility infrastructure will be provided to meet project needs and comply with applicable standards. The building will include office and sanitary facilities.
- **Access route and internal road:** The Project will be accessed via the existing road – A379 (Zarafshan – Navoiy Road). Two short access roads connecting the site to the existing public road infrastructure will be constructed as part of the project.
- **Drainage and Stormwater Management:** Appropriate drainage infrastructure will be incorporated to manage surface runoff within the Project site.
- **Telecommunications:** Communication systems will be installed for operational control, data transfer, and emergency response, in line with utility and regulatory requirements.
- **Water supply:** Water will be supplied through Water trucks to the site. The water will subsequently be stored on-site in storage tanks for construction activities use.

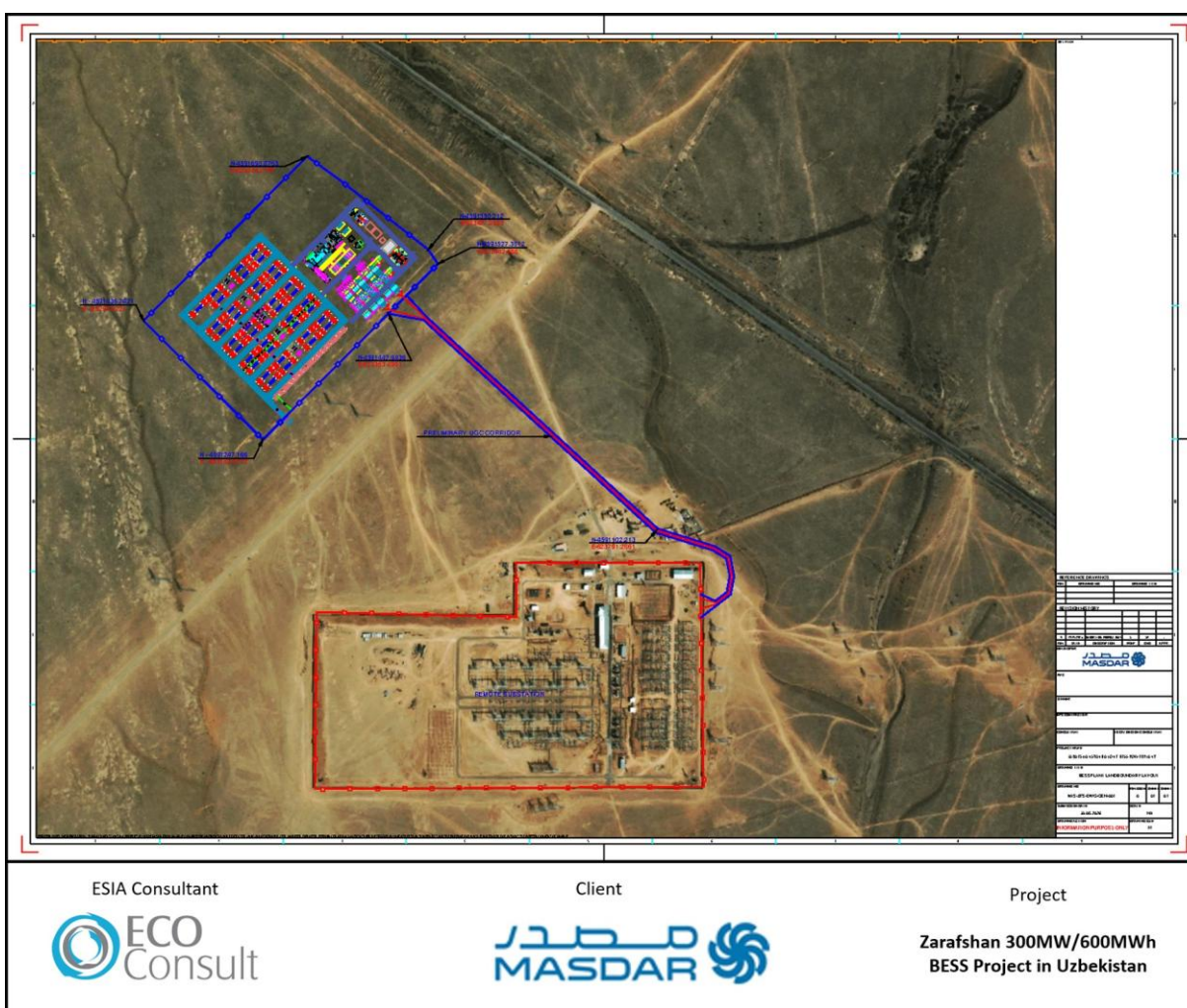


Figure 5: Project Layout

2.3.4 Other Temporary Components

There are additional Project components that will be required on a temporary basis throughout the construction phase of the Project in particular. Those are identified below. The location of such components will be within the Project footprint.

- Site Offices: temporary offices that will be used by Developer and EPC Contractor staff during the construction phase.
- Laydown areas: this is a temporary storage area where tools, materials, equipment and vehicles are stored when not in use.
- Generators: generators will be used for supply of electricity throughout the construction phase of the Project for various power supply requirements. There will be no temporary power supply lines erected before or during the construction period.
- Transport Vehicles and Machinery: During the construction phase, a fleet of machinery—including excavators, Tractor-Loader-Backhoes (TLBs), concrete mixers, concrete pumps, cranes, compaction rollers, and water trucks—will be mobilized.
- Worker Camp: a temporary worker accommodation camp will be required during the construction phase to accommodate non-local workers. Based on current information, the camp is expected to include dormitory blocks, an amenities block, a kitchen and dining hall, a prayer room, showers and toilets, a fire point and a septic tank.
- No concrete batching plant will be built for the Project. Concrete will be supplied by existing commercial plants in the area. No borrow pits will be opened either. The site is generally flat and requires limited earthworks, and material excavated on site will be reused where possible.

2.3.5 Associated Facilities

There are no facilities that meet the definition of Associated Facilities for this Project. All components required for the construction and operation of the BESS, including the BESS units, internal electrical infrastructure, on-site substation, underground grid connection, access arrangements, temporary construction facilities, and worker camp, are considered part of the Project scope. Accordingly, no third-party facilities or infrastructure have been identified that are required for the Project's viability, and that would be classified as Associated Facilities.

2.4 Overview of Project Activities

This section presents the likely activities to take place during the Project development and which will include four distinct phases: (i) planning and design, (ii) construction, (iii) operation, and (iv) decommissioning. Each of which is summarized below.

2.4.1 Planning and Design Phase

This phase will involve the following:

- Completion of all required studies for the Project development. This will include but not limited to

ESIA, topography study, geotechnical study, etc.;

- Obtaining the financing required for Project implementation;
- Obtaining required permits;
- Appointment of EPC Contractor; and
- Preparation of detailed design and layout requirements.

2.4.2 Construction Phase

The typical activities that will take place during the planning and construction phase include the following:

- Mobilization of Project team and equipment to the site and recruitment of workers;
- Undertaking mobilization works for temporary facilities which will involve deployment of site offices and laydown areas;
- Transport of the BESS components to the Project site by road. Around 160 vehicles are expected for the battery containers and around 55 for the medium-voltage station containers. The expected route runs from China into Kazakhstan and then into Uzbekistan. Because the loads are large and heavy, a detailed route survey will be carried out by the EPC Contractor before transport begins to confirm the route, the permits required and the suitability of the roads. A Traffic and Transport Management Plan will be prepared and put in place before construction starts;
- Site preparation for the installation of battery container foundations, involving survey works, site clearing, grading, levelling, limited excavation, and cement works;
- Excavation and backfilling activities for foundations and cable trenches;
- Installation of BESS components, including battery containers, associated electrical and power conversion systems, transformers, and auxiliary infrastructure, likely using onsite mobile cranes;
- Construction works to include civil works, electrical works and mechanical works for the development of the substation and building infrastructure, etc.; and
- Decommissioning of temporary facilities.

2.4.3 Operation Phase

- BESS projects generally require regular preventative, predictive, and corrective maintenance as recommended by the Original Equipment Manufacturer (OEM).
- Maintenance activities are performed on a weekly, monthly, semi-annual, and annual basis to ensure optimal performance and safety.
- The BESS facility will maintain interconnection to the grid continuously, except during interruptions or maintenance periods, with the system actively charging and discharging for approximately 8 hours daily.

Maintenance will be undertaken by a dedicated operations team and will include routine inspections,

testing, servicing, and repairs of the battery system, electrical equipment, safety systems, and associated infrastructure, as required to ensure safe and reliable operation of the facility.

2.4.4 Decommissioning Phase

According to the BSSA agreement, the Project is expected to be operational for 15 years. In the case of complete decommissioning of BESS, the battery enclosures and associated equipment will be taken down, disassembled into components, and removed from the site.

Prior to transportation, the system will be fully de-energized and all components appropriately packaged to ensure safe handling. Depending on their condition, battery modules and systems may be refurbished for use in other projects or sent for final disposal or recycled in accordance with applicable environmental regulations. Foundations will typically be removed, and excavated areas will be backfilled and restored with gravel or vegetation. Internal road networks may be retained, while gates and fences, including those surrounding the substation and battery units, will be dismantled.

2.5 Project Schedule

As stated by the Developer, the Project schedule includes a Planning and Design phase during Q3 2026 to Q1 2027, followed by Construction from Q4 2026 to Q1 2028. The Commercial Operation Date (COD) is expected in Q1 2028. The Project is designed to operate for a period of 15 years following the start of operations.

2.6 Workforce Requirements

The estimated workforce required for the Project during the construction and operation phases are presented below and are indicative only: The figures below represent a cautious, worst-case view for assessment purposes. The actual numbers may be lower and will be confirmed once the construction contractor is appointed.

- During the construction phase, workforce requirements will increase progressively as activities advance, reaching a peak workforce of approximately 300-400 personnel during the main construction period before reducing during commissioning and demobilization. The workforce is expected to comprise a combination of skilled, semi-skilled, and unskilled workers, including engineers, technicians, supervisors, surveyors, equipment operators, labourers, drivers, security personnel, and support staff.
- The Project is committed to maximizing local employment and procurement opportunities wherever suitably qualified personnel and services are available. It is anticipated that a substantial proportion of the construction workforce will be recruited from local and regional communities, creating employment opportunities and contributing to local economic development. Specialist personnel may be mobilized from elsewhere within Uzbekistan or internationally where specific technical expertise is required.
- A temporary workforce accommodation facility may be required for non-local construction workers and specialist personnel. Worker accommodation, where provided, will be developed and managed in

accordance with applicable national legislation, lender requirements, and international good practice, including provisions related to worker welfare, health and safety, and living conditions.

- Construction workforce numbers and accommodation requirements may vary throughout the construction period depending on the final construction methodology, contractor mobilization strategy, and project schedule.
- Around 15 job positions during the operation phase for a duration of 15 years. This will include around 5 skilled job opportunities (such as engineers, technicians, administrative employees, etc.), 5 semi-skilled and 5 unskilled job opportunities (such as security personnel, drivers, etc.).

For the purposes of the ESIA/NTS, local workers are those living in Muruntau Mahalla and Zarafshan City who can travel to site each day, regional workers are those living elsewhere in Navoiy Region, and non-local workers are those who cannot travel home daily and therefore need accommodation.

The Developer is committed to adhering to transparent recruitment procedures which include local community members. In addition, the Developer will seek to maximise local employment opportunities throughout the construction and operation phases and will give preference to suitably qualified local community members for available positions, where the required skills, qualifications, and experience are available locally. Recruitment will be undertaken in accordance with Uzbekistan law, on fair assessment of skills and qualities for the job. All employees will be subject to normal human resource practices and will have to conduct themselves in accordance with the Developer's disciplinary code. No discrimination, on ethnic, gender, race or other such demographic factor will be allowed during recruitment. The only preferential factor shall be the fact those that are directly affected, subject to meeting all the prerequisites for recruitment of the specific job.

2.7 Other Developments in the Area

The Project site is situated in a general area already served by electrical and industrial infrastructure, as summarised below.

- Muruntau 500 kV substation: approximately 300 m south of the BESS site, part of the national transmission grid. Several overhead transmission lines connect to this substation and traverse the general area. These facilities are existing infrastructure and are considered part of the baseline context.
- Zarafshan Wind Farm: starting approximately 7 km north of the Project site, a large-scale wind energy project with a capacity of 500 MW, consisting of 111 direct-drive wind turbines. It provides enough electricity to power around 150,000 homes and displaces more than 1 million tonnes of CO₂ per year.
- Muruntau gold mining facility: approximately 3 km east of the Project site, an open-pit gold mine and one of the world's largest. Mining started in 1967 and the pit has grown to about 3.5 km wide and 600 m deep.
- Existing overhead lines: a number of overhead transmission and distribution lines run through the region, connecting the Muruntau substation to the national grid and the wind farm.

Beyond the facilities noted above, there are no other relevant industrial or energy developments within the immediate vicinity of the Project site. The gold mining company confirmed that it has no planned mining projects in the immediate Project area.

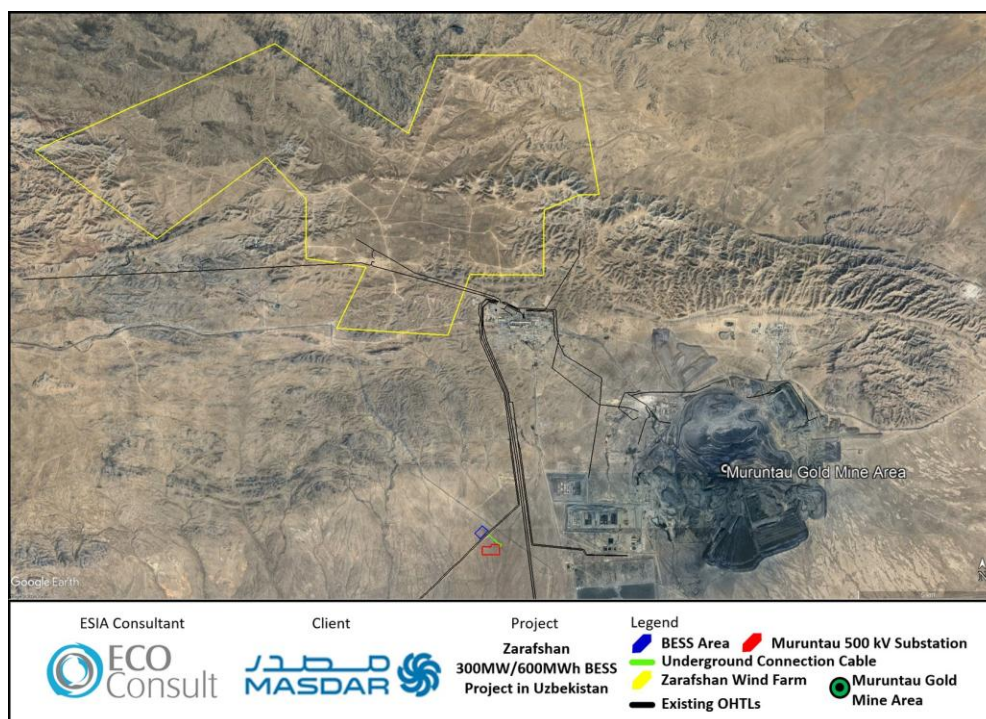


Figure 6: Developments in the General Project Vicinity

3. SUMMARY OF ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS AND IMPACTS

3.1 Introduction

The ESIA included comprehensive environmental and social baseline studies, as well as an assessment of the potential impacts associated with the Project. Where significant effects were identified, appropriate mitigation measures were developed and incorporated into the Environmental and Social Management Plan (ESMP), with the significance of residual effects also evaluated. The impact assessment utilized a methodology reflecting current best practices.

The ESIA provided engineers and designers with valuable insights into the sensitivities of baseline environmental and social resources that could be affected by the proposed development. As a result, the design proposal was developed to consider these sensitivities, aiming to avoid adverse environmental impacts wherever feasible. Key baseline findings and Project impacts are summarized below.

3.2 Environmental and Social Baseline Conditions and Impacts

3.2.1 Landscape and Visual

The wider Project area is characterised by terrain ranging from slightly hilly to relatively flat, with elevations between approximately 490 and 500 m above sea level.

The site is located within the Kyzylkum Desert and is characterized by predominantly clayey-wormwood soils, with some areas of clayey-gravelly ground, and patches of shrubs or ground cover. No major built-up areas, recreational areas, scenic viewpoints or heritage/tourism receptors were identified within the survey area, and the Project site is not located within a landscape of distinct visual or scenic value.

No highly sensitive visual receptors were identified in the surrounding areas. Nevertheless, two potential visual receptors were identified as follows:

- travellers on the A379 highway, whose views are expected to be transient and short-term; and
- workers and users of the Muruntau 500 kV substation and its access road, whose sensitivity is considered low given the existing industrial and electrical infrastructure context.

Construction equipment, excavation and temporary facilities may cause a short-term minor visual impact. Good housekeeping, orderly storage, defined work areas and reinstatement will reduce the residual effect to not significant. During operation, the battery enclosures and other low-rise structures are expected to be around 2-3 m high and the overall visual effect is assessed as not significant.



Figure 7: Project Area Landscape

3.2.2 Land Use

The Project land belongs to the State Institution “Navoiy Regional Territorial Pasture Management Department under the Committee for Veterinary and Livestock Development”. Consultations with the Cadastre Agency confirmed that there are no land disputes or conflicts in the area. Although the land is officially classified for livestock farming purposes, the Pasture Management Administration confirmed that it is not currently under any lease agreement for this or any other use, and that there are no formal or informal physical or economic land use activities within the Project site.

The site visits undertaken by the E&S Team confirmed these findings. No physical structures, agricultural activities, livestock grazing, nomadic activity or other economic activities were identified within the site boundary. No ploughing marks (which would indicate agricultural activity) or livestock faecal remains (which could indicate grazing) were observed. Information obtained from local residents indicated that the wider area west of the road is generally used by herders for livestock grazing; however, during the site visit no herders, livestock or visible signs of previous grazing were observed within the Project site. Access to the wider grazing areas is not affected by the Project.

A review of historical satellite imagery from 2011 to 2023 did not indicate the presence of any previous physical development or economic activities within the Project site.

Because the land is classified as pastureland, a change of land category and a transfer process is required before construction. This involves returning the land to the reserve of Tomdi District Khokimiyat, changing its category, and transferring it to the Ministry of Energy. The Pasture Management Administration raised no objection to this. A formal submission requesting the change of land category was made to the Cabinet of Ministers in June 2026 and a decision is awaited. Because the land is State-owned, is not leased and has no users, no compensation is required as part of this process.

On this basis, the ESIA concludes that no land acquisition or expropriation is required for the Project, and that no physical or economic displacement will occur. Accordingly, no impacts on land use are anticipated and no Resettlement Action Plan or Livelihood Restoration Plan is triggered under AIIB Environmental and Social Standard 2 (Land Acquisition and Involuntary Resettlement).

3.2.3 Geology, Hydrology and Hydrogeology

The surface geology of the Project site comprises Upper Pliocene and Eopleistocene units, mainly alternating claystone, mudstone and underlying sandstone. A geotechnical investigation comprising seven boreholes (120 m total drilling depth), ten trial pits (maximum depth 3.10 m), electrical sounding and thermal resistivity tests, standard penetration tests and laboratory testing was undertaken. No significant geohazards were identified in relation to weak soil deposits, bearing capacity or settlement problems, liquefaction susceptibility, slope instability or other ground conditions that could affect construction of the Project. Groundwater was not encountered during borehole drilling or trial pit excavation. The site lies within a seismically active country and falls within seismic Zone 6, which has been accounted for in the Project design.

The Project is located in an arid to semi-arid climatic setting, with annual precipitation generally ranging between 150 mm and 250 mm. A standalone hydrological assessment was undertaken, including rainfall analysis, catchment definition, runoff modelling and hydraulic modelling for the 10, 25, 50 and 100-year return periods, with a 20% increase applied to design rainfall values to allow for climate change. No natural flooding events have been recorded in recent years in the area near the Project. The modelling indicates that inflow from the surrounding catchments may result in rapid water accumulation near the site but not inside the plant itself, with the plant remaining mostly dry except for local depressions. The hydrological study concludes that no additional flood protection or mitigation structures are required, and that routine site grading and maintenance of drainage paths are sufficient for runoff management. On this basis, no impacts from flood risk are anticipated.

Taking the above into account, the following potential impacts were considered:

- Potential for soil contamination from improper waste, wastewater and hazardous materials management during construction and operation.
- Risk of groundwater contamination from improper storage or disposal of waste streams and hazardous substances during construction and operation.
- Potential soil disturbance, erosion and runoff during construction, particularly during rainfall events

The Developer will implement mitigation measures to prevent and control these risks to include but not limited to the following:

- Coordinate for the collection of waste streams from the site to approved landfills or for recycling for solid waste and hazardous waste and Wastewater Treatment Plants (WWTPs) for wastewater.
- Prohibit the uncontrolled disposal of any waste to the land.
- Distribute appropriate number of properly contained litter bins and containers for waste storage.
- Ensure septic tanks are well contained and impermeable to prevent leakage of wastewater into soil.

- Ensure hazardous materials are stored in proper areas and in a location where they cannot reach the land or natural drainage channels in case of accidental spillage. This includes storage facilities that are of hard impermeable surface, with a hard roof, flame-proof, accessible to authorized personnel only, locked when not in use, and prevents incompatible materials from coming in contact with one another.
- Implement proper housekeeping practices on the construction site at all times.
- Maintain records and manifests that indicate volume of waste generated onsite, collected by contractor, and disposed of at final location (landfills, WWTP, etc.).
- Salvage and store topsoil and subsoil before areas are excavated, with topsoil stripped and stockpiled separately.
- Erect erosion and sediment control barriers.
- Site drainage system design will consider channels and diversion drains to be constructed and maintained to divert surface runoff around areas which duplicate the natural drainage characteristics where practicable

Following implementation of these measures, the residual significance of all of the above impacts is reduced to not significant.

3.2.4 Biodiversity

Baseline biodiversity was assessed through desktop studies which includes an IBAT search (a literature review and a protected areas review) and field surveys undertaken in April 2026, comprising habitat mapping, quadrat sampling, and surveys for reptiles and amphibians, birds and mammals.

Protected areas

No protected sites or designated areas are present within 10 km of the Project area. The nearest designated area is the Mount Aktau IBA, situated approximately 20 km north of the Project location, which is designated for its breeding populations of Egyptian Vulture and Lesser Kestrel, along with resident Cinereous Vultures. Given the designated species, the reason for designation and the distance from the proposed works, no impacts to protected sites are predicted during either construction or operation.

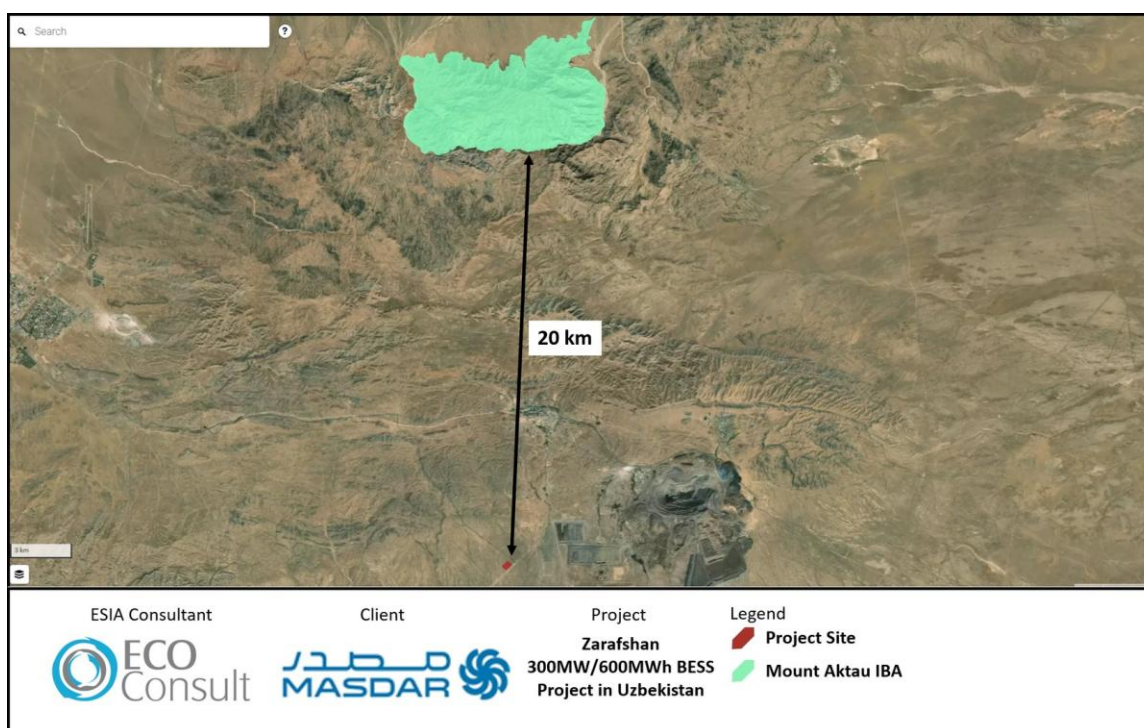


Figure 8: Protected Areas and KBAs around the Project Site

Habitats and flora

The majority of the Project area is considered natural habitat, with sections close to the road and areas adjacent to the Muruntau substation considered modified habitat as a result of previous construction and land disturbance. The site comprises a mosaic of semi-desert vegetation communities, recently abandoned or disturbed land at the peripheries, and localised anthropogenic habitats associated with the A379 highway and the substation. A total of 40 plant species were identified within the Project area, of which 22 are annuals, 16 perennials, one a tree and one a shrub. No alien or invasive species were recorded. Of the 30 sampling quadrats surveyed, three were classified as Poor condition, 19 as Moderate and eight as Good.

A notable finding was the occurrence of *Tulipa lehmanniana*, listed in the Red Data Book of the Republic of Uzbekistan and assessed by the IUCN as Near Threatened. This species was recorded in 12 quadrats, all located along the northern edge of the Project area within the 150 m buffer zone extending from the A379 highway toward the Project area. All other plant species recorded are assessed as Least Concern and are considered common and widespread.

In response to this finding, the layout of the battery facility was moved southwards so that it sits entirely outside the areas where the tulip was found. The areas where the species was recorded are treated as sensitive, and the measures to protect them during construction, including marking them out and keeping machinery, equipment and materials away from them, will be set out in the Biodiversity Management Plan.

Black saxaul, a desert shrub, was also recorded, with 33 individual shrubs identified within the construction footprint. Removal of these individuals will be undertaken in accordance with the Tomdi branch of the National Committee on Ecology and Climate Change.

Critical Habitat

A specific check was carried out to determine whether the Project area qualifies as critical habitat, meaning an area of the highest biodiversity importance under international standards. The assessment concluded that the Project area does not trigger critical habitat.

Fauna

- Four (4) reptile species were identified during the survey, of which only the Central Asian Tortoise (IUCN Vulnerable; Uzbekistan Red Data Book Vulnerable) is of conservation concern. Tortoises were found at a density of 0.6 individuals per hectare, which is considered rare under commonly accepted criteria.

Tortoise protection measures began in spring 2026, including repairing of the existing concrete-block exclusion barrier around the site and relocation of 13 Central Asian Tortoises, comprising 4 males, 8 females and 1 of undetermined sex. Further protection measures will be implemented during construction through the Biodiversity Management Plan. The relocation area was inspected beforehand in collaboration with the Tomdy branch of the National Committee on Ecology and Climate Change and was chosen because it offers suitable habitat. The local ecology authority took part in the relocation and will monitor the relocation area.

- A total of ten (10) bird species were observed; two (2) are of conservation concern (Egyptian Vulture and Steppe Eagle, both IUCN Endangered), but all observations were of birds in transit over the site, either on migration or as roaming behaviour, and no stopover sites or nesting areas for birds of conservation concern are considered likely on site.
- Six (6) mammal species were identified, all categorised as Least Concern; no habitat suitable for roosting bats was identified.



Figure 9: Central Asian Tortoise and Perimeter Barrier within the Project Site

The following potential impacts were identified:

- Permanent loss of habitat over a construction footprint of approximately 10 hectares of semi-desert vegetation, the majority of which is natural though degraded in parts. Assessed as of moderate significance.
- Potential introduction of non-native or invasive species during construction and operation, for example carried in on vehicles. Assessed as of minor to moderate significance in both phases.
- Potential direct mortality of the Central Asian Tortoise during construction in absence of mitigation measures, due to the species' cryptic behavior, limited mobility and seasonal activity period (typically active for 8–12 weeks yearly). Assessed as of moderate significance at a local level.
- Loss of nesting habitat for lower-sensitivity nesting birds (passerines) during construction. Assessed as of minor significance.
- Potential direct and indirect impacts on vertebrates from littering and poor waste management, which could attract carrion-feeding birds such as vultures and eagles. Assessed as of minor to moderate significance during construction, and moderate during operation together with the risk of collision with Project infrastructure such as fencing.
- Potential direct mortality and reduction in habitat quality for mammals during construction. Assessed as of minor significance.

A Project-specific Biodiversity Management Plan will set out all mitigation and monitoring requirements. A full-time Ecologist will oversee its implementation.

- The final extent of habitat impacts, including the area of Moderate and Good condition habitat affected during construction, will be confirmed prior to construction and used to inform the measures required to achieve no net loss of biodiversity. These measures may include habitat restoration and enhancement, revegetation using native species characteristic of the local area, restoration of disturbed areas where appropriate, and other measures identified through application of the mitigation hierarchy. Protected plant species will be managed in accordance with applicable regulatory requirements and international good practice. For black saxaul trees affected by the Project, compensation measures will be implemented in accordance with the requirements of the relevant authorities.
- Further tortoise surveys and translocation will be completed before construction. The integrity of the site boundary barrier will also be maintained to prevent tortoises from re-entering the Project area.
- Construction areas will be clearly marked to prevent unnecessary habitat disturbance. Required measures will be implemented to protect any nesting birds, control waste and invasive species, compensate for tree loss, such as saxaul trees through a compensation programme managed by the Navoiy branch of the National Committee on Ecology and Climate Change following a site inspection and damage assessment, and provide biodiversity training to all workers.
- During operation, monitoring will be undertaken for invasive species. Following implementation of these measures, the remaining biodiversity impacts are expected to be not significant.

3.2.5 Archeology and Cultural Heritage

The cultural heritage assessment included stakeholder consultations, a literature review and a field survey covering the entire Project footprint, including the BESS area and underground transmission line route.

Consultations and the literature review identified no registered archaeological or cultural heritage sites within the Project area or within 5 km. The field survey also found no archaeological remains, burial structures, settlement traces or other evidence of past human activity.

Nonetheless, if construction activities are improperly managed, there remains a low possibility of chance-finds of buried remains. Improper handling of such discoveries could lead to disturbance or damage. To mitigate this, the ESIA requires the implementation of chance find procedures, requiring the immediate halting of construction, fencing of the area, proper signage, and notification of the Institute of Anthropology / National Centre of Archaeology before work can resume.

3.2.6 Air Quality and Noise

Existing air and noise conditions are influenced mainly by the A379, the mine and electrical infrastructure. There is no major residential receptor close to the site. Project construction dust and equipment noise are assessed as minor before mitigation and not significant after controls.

Measures include water spraying, covering dusty loads, a 15 km/h site speed limit, maintained equipment, controlled working areas, suitable personal protective equipment, community grievance management and quarterly monitoring of total suspended particles, PM10 and noise at the activity area and relevant receptors.

Operational noise modelling predicts around 10-20 dBA at Muruntau Village, well below applicable thresholds, and the impact was scoped out.

The existing mining activity in the area already generates dust, and occasional dust complaints occur during hot weather and unfavourable winds. Construction of the Project could add to dust levels in the area for a limited period.

Good practice guidance on construction dust recommends that a detailed assessment is carried out where homes or other sensitive places are located within 250 m of a construction site boundary. This distance has been used as a cautious screening distance around the Project site. It does not mean that dust would travel 250 m in every direction from the whole site boundary. Dust-generating work will be concentrated in specific areas within the site.

However, the Project contribution is temporary, the nearest community is 12 km away, and dust controls will be applied throughout construction. Additional measures include taking weather conditions into account when scheduling dusty activities, increasing dust suppression during hot and windy periods, and providing suitable respiratory protection to workers carrying out dusty work.



Figure 10: Closest Sensitive Receptor

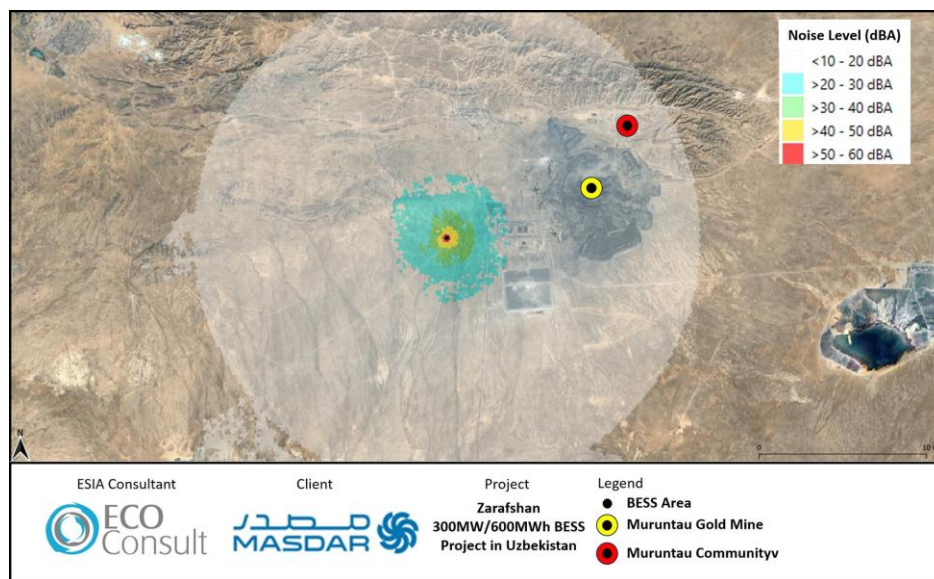


Figure 11: Rapid Noise Modelling for the Project Site

3.2.7 Infrastructure and Utilities

Water Resources and Utilities

Water during the construction and operation phase will be required for potable use (e.g. drinking for workers) and non-potable use (dust suppression). Nevertheless, water requirements will be minimal and easily handled through licensed tankers to the Project site. Project is also committed to developing a water management plan that will emphasize implementing water efficiency measures such as dry-cleaning methods wherever applicable, utilizing water saving fittings (taps, urinals, toilets, trigger guns, etc.), and other.

Waste Management

Household-type waste, construction waste and wastewater will be produced during construction and operation. Quantities are expected to be modest and manageable through existing licensed services. Municipal waste management in the area is carried out by the State Unitary Enterprise “Toza Hudud”. Waste will be collected and stored on site and then taken by licensed contractors to an approved disposal facility. The nearest approved facility, including its location, the types of waste it accepts and its permit status, will be confirmed before construction begins. Wastewater will be collected and taken by licensed contractors to an approved treatment plant. Hazardous waste will include items such as used oil, chemicals, paint containers and solvents, as well as damaged or faulty batteries and batteries at the end of their working life. There are no hazardous waste landfills in Uzbekistan. Instead, government-authorized specialist companies collect, process, recycle or manage each type of hazardous waste.

In addition, a Waste Management Plan will be developed for the construction and operations phases - including, but not limited to waste reduction strategies, recycling and reuse, and appropriate disposal methods, in line with the project standards.

Battery Waste Management during Operation / End of Life Disposal

Battery waste during the operation and decommissioning phases could potentially lead to environmental contamination, health risks, and resource loss if not properly managed. Key impacts include potential soil and water pollution from hazardous substances, risks to human health, and non-compliance with waste disposal regulations.

If a battery unit is found to be faulty or damaged because of a manufacturing quality problem, the manufacturer will replace it. The removed unit will be taken from the site to a central warehouse designated by the manufacturer, where it will be safely isolated and assessed. Units handled in this way do not stay on site and do not become Project waste.

The ESIA requires before commencement of any decommissioning activities and/or in the event of damage or defects to the batteries, that a Disposal Plan is prepared prior to decommissioning of BESS components.: The plan should consider the following options and compare the costs/benefits of each:

- Evaluate recycling options for E-waste, including the identification of appropriate licensed waste processing facilities for this type of waste within the country, if available.
- Provide suitable proof that the recycling concept is in compliance with international conventions (Basel Convention).
- The Project Operator shall specifically state which materials will be recycled or disposed of locally. If exported internationally, the Project Operator should specify which materials will be exported and to which location.
- Ensure safe handling, transport, recycling, recovery, and disposal of battery system components and associated materials, taking into account applicable regulatory requirements and good international industry practice including:
 - Assessment of the condition of the Battery System and any requirements for its safe handling and transport;
 - Safe packaging, storage, and transportation of battery system components to approved recycling, recovery, or disposal facilities;

- Recycling, recovery, and disposal of battery system components using appropriately licensed facilities and in accordance with applicable regulatory requirements and good international industry practice.

Roads and Highways

The ESIA assessed potential impacts on road traffic and capacity. At peak construction, the Project is expected to generate approximately 29 vehicle movements per day. This represents only a minor increase in traffic on the existing road network and is not expected to affect the capacity or operation of existing highways.

Another traffic-related impact identified by the ESIA relates to the risk of road traffic accidents involving Project vehicles and other road users during the construction phase. Such risks may arise from factors including non-compliance with traffic regulations, excessive speed, driver fatigue or distraction, unsafe driving practices, and the transportation of oversized or heavy Project components.

To manage these risks, the Contractor will prepare and implement a Traffic and Transport Management Plan before commencement of any transportation activities. The plan will define measures for the safe transportation of Project components, management of traffic movements both on-site and off-site, driver requirements, road safety measures, and coordination with relevant authorities regarding transportation and logistics requirements.

All vehicles used for the Project will be regularly inspected, maintained and serviced. It is also noted that the peak figure of 29 vehicle movements per day assumes that all peak traffic occurs on the same day, which is unlikely in practice.

3.2.8 Worker Welfare, Health and Safety

During the construction and operation phases, potential impacts are mainly associated with occupational health and safety risks, worker accommodation, and workforce management.

- Occupational health and safety risks are inherent to large-scale construction and operation activities, including those associated with working at heights, moving machinery, confined spaces, handling hazardous materials, and exposure to electric shock or fire. The ESIA requires the Contractor and Project Operator to develop and implement a project- and site-specific Occupational Health and Safety Plan (OHSP) and Emergency Preparedness and Response Plan (EPRP) to prevent accidents, protect workers, and maintain safe operations.
- Inadequate worker accommodation may adversely impact worker welfare, health and safety through inadequate living conditions, insufficient access to essential services and facilities, or accommodation arrangements that do not adequately address workers' needs. To manage these risks, ESIA requires the development and implementation of an Accommodation Management Plan to ensure that accommodation facilities are safe, suitable, and compliant with applicable national requirements and international standards. These requirements apply equally to the worker camp and to any hotel, apartment or other accommodation used. Where workers are accommodated within existing communities, the worker code of conduct will include specific requirements on respectful behaviour, noise, and interaction with community members.

- Labor and human rights risks may arise if workforce is not appropriately managed, including risks related to child labour, forced labour, unfair working conditions, excessive working hours, discrimination, and other labour rights concerns. Risks of discrimination, harassment, and abuse may arise within the workforce including Gender Based Violence and Harassment (GBVH) and Sexual Exploitation, Abuse and Harassment (SEAH). To manage these risks, the ESIA requires the development of a Labor and Working Conditions Management Plan (LWCMP). The plan will establish the framework for workforce management, including recruitment and employment practices, working conditions, worker welfare, grievance management, codes of conduct, and measures to prevent and address GBVH/SEAH.
- Two existing overhead power lines run close to the Project site, at approximately 37 m and 80 m. Lifting operations and the movement of tall vehicles and machinery near these lines will only take place under a written permit, which will confirm safe distances, require a trained banksman to be present, and set any restrictions on crane movement. Exclusion zones will be marked out on the ground beneath and beside the lines with high-visibility fencing and hazard signs, and storage, parking and temporary structures will not be allowed within them. Access to the onsite substation and to live electrical equipment will be restricted to authorized personnel only.
- Drinking water will be provided to all workers from authorized suppliers only and will meet national drinking water quality requirements. Workers carrying out dusty work will be provided with suitable respiratory protection.
- All workers must read and sign a code of conduct, which prohibits harassment and abuse, prohibits discrimination, and prohibits entering third-party facilities near the Project site including those of the Murantau Gold Mining Facility. The workers' own way of raising concerns will apply to all workers on the Project, including those employed by contractors and subcontractors. It will be available in the languages used on site, including for workers who cannot submit a written complaint, will set clear timeframes for response, will allow anonymous complaints, and will protect anyone raising a concern from reprisal.

3.2.9 Community Health, Safety and Security

- Potential impacts may arise from emergency situations during operation, including fire/thermal runaway, explosion, arc-flash, electric shock, and hazardous gas release. However, the BESS will incorporate multi-layer prevention and protection including fire, smoke, heat and gas detection, suppression and cooling systems, explosion-relief venting, physical separation between battery containers, on-site fire-water storage, and 24-hour remote monitoring. In addition, the ESIA requires the development of an Emergency Preparedness and Response Plan (EPRP) which will include measures such trained emergency responders, emergency drills, coordination with emergency service providers.
- Consultation with the regional emergency services identified that the nearest rescue unit is approximately 65 km away and that access for rescue vehicles is limited. For this reason, the Project is required to provide its own emergency response and firefighting capacity on site at all times, with staff who have received certified training for battery-related emergencies. This requirement has been taken into account in the assessment. The nearest community is approximately 12 km from the Project site and any emergency event would be contained within the fenced Project site. Taking this into account together with the design measures, the risk to the community is assessed as minor.

- Potential impacts may arise from unauthorized access to the Project site during construction and operation, which could expose individuals to hazards such as electric shocks, thermal burns, traffic accidents, or chemical exposure. To manage these risks, the ESIA requires the development of a Security Management Plan (SMP) which should identify site control access measures such as fencing checkpoints and also entail stakeholder engagement to raise awareness about risks from unauthorized access.
- Potential impacts may arise from the inappropriate conduct or actions of security personnel when interacting with local communities. Such incidents could result in community concerns, loss of trust, grievances, or escalation of conflicts. To manage these risks, the SMP will include requirements such as the appropriate screening and selection of security personnel, establishment of a code of conduct for security workers and associated disciplinary procedures, training on security and human rights principles, use of force requirements, and appropriate stakeholder grievance and incident management procedures. Similar arrangements will also be implemented during the operational phase of the Project.
- Potential impacts may arise from the temporary influx of workers during the construction phase. If not appropriately managed, worker influx may place pressure on local services and infrastructure, increase the risk of communicable diseases, and result in inappropriate interactions between workers and local communities. To manage these risks, the ESIA requires the implementation of measures within the Worker Accommodation Management Plan and the Labor and Working Conditions Management Plan. These measures will include appropriate worker accommodation arrangements, workforce codes of conduct, worker induction and awareness programs, hygiene and health measures, and procedures to promote positive interactions between the workforce and local communities. At peak, around 100 workers are expected to be accommodated, which is less than 4% of the Muruntau population, and most of the workforce will travel home after work. Medical examinations and fitness-for-work checks will be carried out for all workers.
- Electric and magnetic fields are produced by all electrical equipment and power lines. The Project includes a 220 kV transmission line connecting the battery facility to the substation, which will be built underground. Burying the line greatly reduces the levels measured at ground level. The nearest home is approximately 12 km from the Project site and there are no other public receptors within 5 km. Published data for comparable underground cables confirm that levels remain well below internationally recognized public exposure limits. A public road crosses the route of the underground line, where the line will be laid inside a protective conduit. Anyone crossing this point would be exposed only briefly and occasionally. Significant effects on the general public are therefore not expected.
- After construction, the underground transmission line will be transferred to the national grid company, NEGU, for operation and maintenance. The arrangements for managing the route after handover, including responsibility for maintaining markers, signage and access control, will be agreed between the Developer and NEGU before the handover takes place.

3.2.10 Socioeconomics

The main impact anticipated on socio-economic conditions is related to potential job opportunities from the Project. However, such impacts are limited, taking into account the nature of activities for the Project. During the construction and operation phases, the Project is expected to provide job opportunities for

local communities. The Project is expected to provide a range of employment opportunities during the construction and operation phases, including the following:

- The workforce will build up gradually as works progress, reach a peak of around 300 - 400 workers for a short period of approximately one month, and then reduce during commissioning and demobilization.
- Around 15 job positions during the operation phase for a duration of 15 years. This will include around 5 skilled job opportunities (such as engineers, technicians, administrative employees, etc.), 5 semi-skilled and 5 unskilled job opportunities (such as security personnel, drivers, etc.).

A local recruitment procedure will be developed which will identify the number of job opportunities targeted for the local communities and details on how job opportunities will be announced as well as a selection process that is fair and transparent and provides equal opportunities for all, including females.

Recruitment will give priority first to the Muruntau community, then to Tomdi District and Zarafshan City, then to Navoiy Region, and then to the rest of Uzbekistan, subject to the required skills and qualifications being available.

Recruitment will be undertaken through a transparent and fair process based on the skills and qualifications required for each position. Information on available employment opportunities and recruitment activities will be shared with local communities through appropriate channels, including the relevant Khokimiyats and Mahallas and the Muruntau Mahalla Telegram channel.

The Project will also seek to ensure that information about employment opportunities is accessible to groups who may face greater barriers to employment, including women, young people, persons with disabilities and vulnerable households. Relevant engagement and recruitment processes will take accessibility needs into consideration, and the Project grievance mechanism will be available to all community members.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING

The ESIA includes an Environmental and Social Management Plan (ESMP) that provides a structured approach for managing and monitoring environmental and social impacts during the Project's construction, operation, and decommissioning phases. The ESMP outlines mitigation measures designed to eliminate or reduce potential impacts to acceptable levels, as well as monitoring actions to ensure these measures are implemented effectively.

Throughout construction and operation, specific activities, indicators, and environmental and social receptors will be monitored. This monitoring may involve observation and recording or more detailed data gathering and sampling. Monitoring reports will be required from the Contractor and Operator during the construction and operational phases. The monitoring results will be useful for assessing the long-term cumulative effects, if any. If on-going problems occur, adaptive mitigation measures can be developed and implemented.

The management plans identified in the ESMP must be submitted to and approved by the Developer before the relevant Project phase begins. Construction will not start until the Developer has approved the plans required before construction.

An Environmental and Social Action Plan will also be prepared following completion of the ESIA. This will bring together the key environmental and social actions, responsibilities, timelines and monitoring requirements agreed with the financing institutions.

5. HEALTH, SAFETY, SECURITY, AND ENVIRONMENT (HSSE) MANAGEMENT SYSTEM (MS)

A Health, Safety, Security, and Environment (HSSE) Management System (MS) will be prepared that is project and site specific and builds on and takes into account the requirements of the ESMP. Summarized below is the overall framework, structure and key requirements of the HSSE MS for the key entities involved in the Project.

Developer

- HSSE MS Manual that should include: (i) HSSE Policy; (ii) Human Resources Policy and Procedures; (iii) HSSE Organizational Structure and Responsibilities; (iv) ESHS Monitoring and Reporting Requirements; (v) HSSE Meeting Requirements; (vi) HSSE Training Requirements.
- Stakeholder Engagement Plan (SEP) including stakeholder grievance mechanism;
- Subcontractor and Supplier Management Plan; and
- Community Development Plan
- Environmental and Social Action Plan (ESAP)

EPC Contractor

- ESIA including ESMP
- HSSE MS Manual (in line with Developer) that should include: (i) HSSE Policy; (ii) Human Resources Policy and Procedures; (iii) HSSE Organizational Structure and Responsibilities; (iv) HSSE Monitoring and Reporting Requirements; (v) HSSE Meeting Requirements; (vi) HSSE Training Requirements.
- Training Management Plan

- Site Mobilization Plan
- Hazardous Material and Waste Management Plan
- Water Management Plan
- Biodiversity Management Plan
- Emissions Management Plan
- Chance Find Procedure
- Traffic and Transportation Management Plan
- Emergency Preparedness and Response Plan
- Occupational Health and Safety Management Plan
- Labor and Working Conditions Management Plan which includes:
 - Grievance Redress Mechanism
 - Code of Conduct
 - Gender-Based Violence and Harassment Measures
- Worker Accommodation Management Plan
- Subcontractor and Supplier Management Plan
- Security and Human Rights Management Plan
- Gender Management Plan

Project Operator

- HSSE MS Manual (in line with Developer) that should include: (i) HSSE Policy; (ii) Human Resources Policy and Procedures; (iii) HSSE Organizational Structure and Responsibilities; (iv) HSSE Monitoring and Reporting Requirements; (v) HSSE Meeting Requirements; (vi) HSSE Training Requirements.
- Training Management Plan
- Hazardous Material and Waste Management Plan
- Water Management Plan
- Traffic and Transportation Management Plan
- Emergency Preparedness and Response Plan
- Occupational Health and Safety Management Plan
- Labor and Working Conditions Management Plan
- Subcontractor and Supplier Management Plan
- Security and Human Rights Management Plan
- Gender Management Plan

Contractors and Suppliers

The Project will also manage the environmental and social performance of its contractors and suppliers. environmental and social requirements will be included in tender documents and contracts, and suppliers will be screened before selection, including a review of their labour and human resources policies. Contracts will allow for inspection and audit, corrective action, penalties and, where necessary, termination. These requirements must also be applied to subcontractors and second-tier suppliers.

Given that the Project purchases battery systems through international supply chains, a supply chain due diligence or reputational risk assessment will be carried out on the manufacturer of the battery components, taking into account labour and human rights risks within the manufacturer's own supply chain.

6. FURTHER INFORMATION AND CONTACT DETAILS

The Developer intends to provide all relevant information to the public and which will include but not limited to the following:

- Stakeholder Engagement Plan (SEP) – including the grievance mechanism for affected stakeholders and communities;
- Non-Technical Summary (NTS); and
- Environmental and Social Impact Assessment (ESIA), including the Environmental and Social Management Plan (ESMP).

The above is provided at the Developer's website at the following link:

www.masdar.ae

In addition, hard copies of the above will be available at the following locations. These documents will remain in the public domain for the duration of the Project and will be updated as appropriate.

- **Muruntau Village – Local Unit Office**
Location: 19 Tadbirkorlar Street, Kimyogarlilar Residential Area, Muruntov Mahalla (MFY), Zarafshan City, Navoi region
Telephone: +998933185140
- **Tomdi District Khokimiyat**
Location: Yangi Tomdi Settlement, Tomdi District, Navoi region
Telephone: +998795821317

Contact Details for the Public

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