# NON-TECHNICAL SUMMARY (NTS)

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT,
FOR THE JALAN BANI BU ALI WIND IPP PROJECT
IN SOUTH SHARQIYAH, OMAN

## 1. INTRODUCTION

EDF power solutions, Al Khadra Partners and OQ Alternative Energy, through a special purpose vehicle called Saba Jalan Wind Power SAOC, have been appointed to develop the Jalan Bani Bu Ali Wind IPP in Oman. The Project is a utility-scale wind farm with a planned maximum capacity of approximately 123.2 MW connected to the national grid through a 132 kV evacuation interface. This document is the Non-Technical Summary (NTS) of the Environmental and Social Impact Assessment (ESIA) for the Project, and has been prepared by the appointed environmental consultant, Five Elements.

### PROJECT CATEGORISATION

Under Oman Environment Authority permitting requirements, the Project is treated as a **Category A** project requiring an ESIA. For international financing purposes, the Project is assessed against lender standards as broadly consistent with a **Category B** project.

## 2. PROJECT DESCRIPTION

The Project is made up of 16 wind turbine generators, internal electrical collection systems, access and internal roads, a Project Substation, temporary construction facilities and a short 132 kV grid connection to the OETC Grid Station. Construction is expected to require substantial civil works, abnormal-load logistics and temporary laydown areas, while operations will involve limited routine inspection, maintenance and environmental monitoring over a 30-year period.

### PROJECT LOCATION

The Project is in Wilayat Jalan Bani Bu Ali, Governorate of South Sharqiyah in a rural, sparsely populated area. The plot has an area 10.75 km$^2$, with the nearest settlements around 3 km to the south of its boundary.

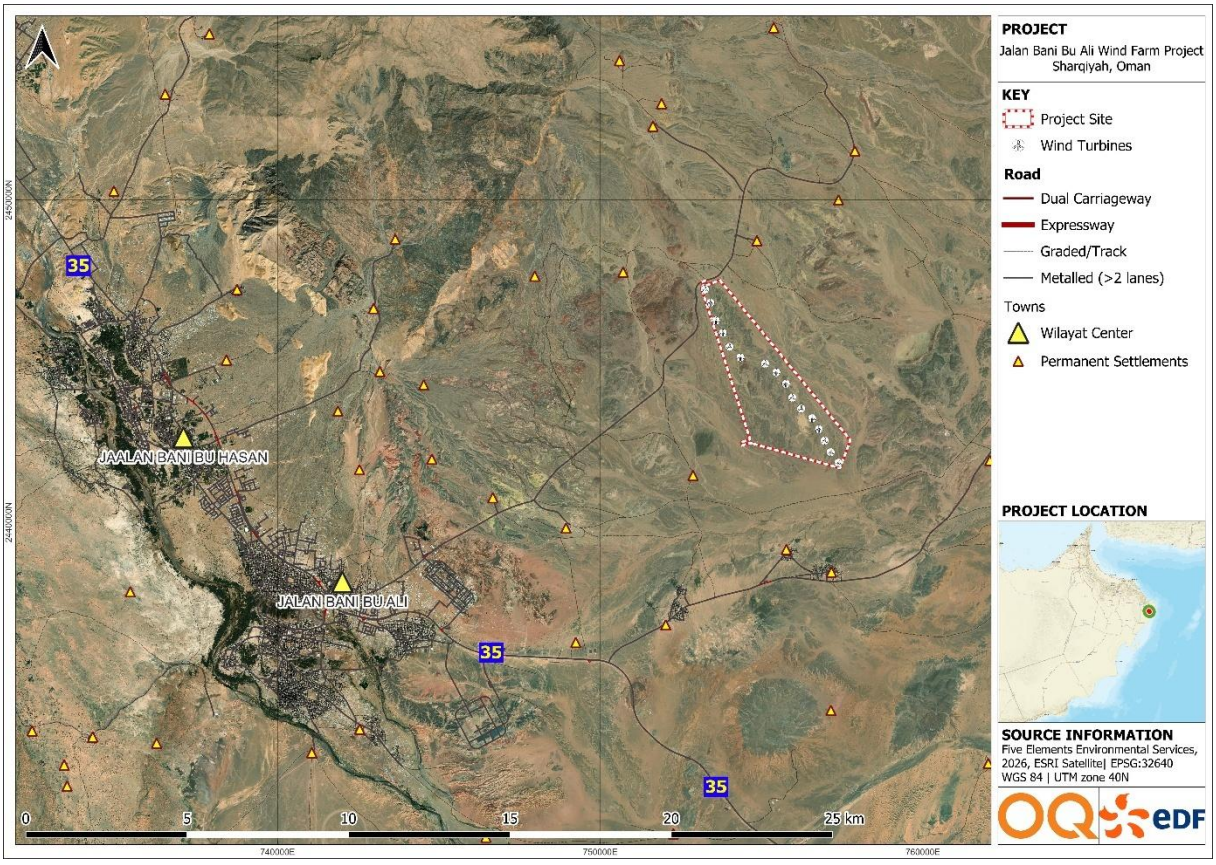


*Figure ES-1 Project Location*

## PROJECT LAYOUT

The layout includes 16 turbines rated at 7.7 MW each, with internal 33 kV cabling leading to a 33/132 kV Project Substation. Electrical power will be exported to the OETC Grid Station that connects to the national grid.

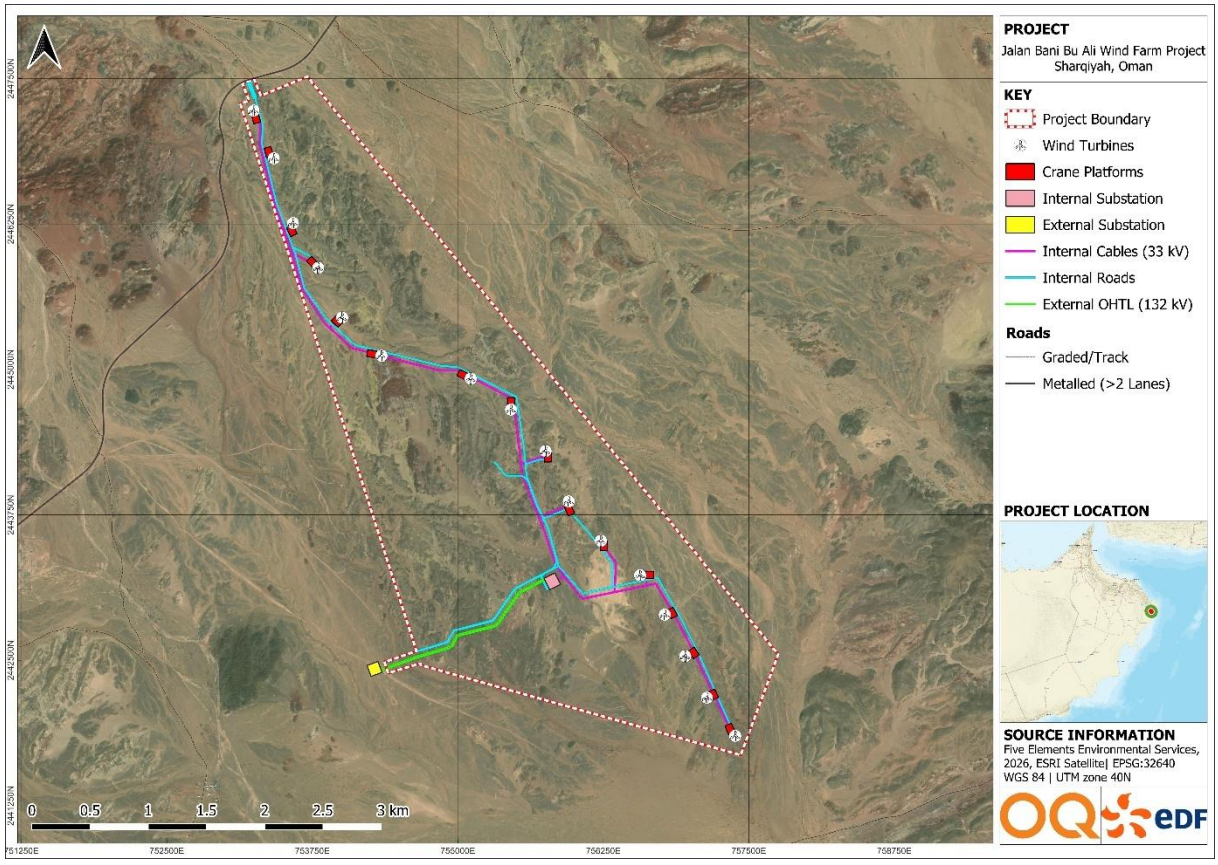


*Figure ES-2 Project Site Layout*

## PROJECT DESIGN AND TECHNICAL COMPONENTS

### *WIND FARM*

The wind farm will use 16 WTGs with a hub height of about 110 m and rotor diameter of 184 m. Each turbine requires a foundation, crane hardstanding and laydown area which will remain in place for maintenance and decommissioning access. The total hardstanding and laydown area for turbines is 9.12 ha.

### *ELECTRICAL CONNECTIONS*

Each turbine will connect via buried cables to the Project Substation which includes transformers, the control building, firefighting facilities, and storage and security infrastructure. The Project Substation will connect to the OETC Grid Station via an overhead line 1.7 km in length.

### *ACCESS AND INTERNAL ROAD NETWORK*

New access from Ghuwaylah Road to an internal road network 15 km long. A separate service road will also follow the overhead line corridor from the Project's substation to the OETC Grid Station.

## PHASES OF THE PROJECT

The Project phases comprise construction, operation and decommissioning. Construction includes site preparation, foundations, roads, cabling, turbine erection and substation works. Operations include performance monitoring and control, maintenance, and performance monitoring. At the end of the Project the facility will be decommissioned and the site reinstated or re-developed.

### *LOGISTICS*

Approximately 263 trips will be required to transport turbine components from the Port of Duqm, 450 km to the south of the Project Area. Logistics will transport abnormal-loads under Royal Oman Police escort, with temporary bypasses built where necessary, including Al Ashkorah and Jalan Bani Buali.

### *SITE PREPARATION*

Site preparation will be undertaken by the EPC Contractor and will include clearing, grading, foundation excavation, crane platform formation, road construction, cable trenching and preparation of the Project Substation area. The works will be controlled through method statements and the construction ESMP.

### *CONSTRUCTION PHASE*

Construction activity will include civil works, temporary facilities, WTG foundations, component transport and assembly, underground cable installation, electrical systems, substation construction and commissioning support. The workforce will peak at 300 for part with workers living in off site in facilities.

### *OPERATIONS AND MAINTENANCE*

Operations will be comparatively low intensity. Permanent staffing will be limited, with specialist vendors and contractors contracted for maintenance.

### *DECOMMISSIONING*

Decommissioning will take 6 to 12 months. Project materials will be reused or recycled where feasible, and the site would be reinstated. Alternatively, at the end of the operational life span, the facility may be repowered to extend its operations, by refurbishing or replacing components.

## PROJECT SCHEDULE

Construction is expected to last approximately 12 to 18 months, with operations lasting 30 years.

# 3. REGULATORY FRAMEWORK AND APPLICABLE STANDARDS

The Project will meet Oman's national environmental permitting requirements and international lender standards. The main legal and standards requirements include:

- National environmental laws, regulations, and environmental permit requirements;
- Oman Government Policies (Vision 2040, Energy Strategy, and Net Zero Strategy);
- International Standards (IFC and World Banks Standards; Equator Principles;
- Good international industry practice for wind energy projects.

## REGULATORY ENVIRONMENTAL PERMIT

The Environment Authority confirmed acceptance of the regulatory ESIA subject to permit conditions on 13 May 2026 (EA Letter No. 5511/87/2024-1). These require compliance with ESIA mitigation and ESMP commitments, consideration of bird migration patterns, turbine noise control, management of cumulative impacts, notification before tree removal and proper waste management through approved facilities.

## PROJECT HSSE COMMITMENTS

The Project Proponent will apply health, safety, security and environmental requirements based on shareholder policies.

# 4. ENVIRONMENTAL BASELINE DESCRIPTION

The baseline describes the physical, biological and social setting of the Project Area and its areas of influence. The site is a rural, arid inland landscape with sparse permanent receptors, intermittent pastoral use, sensitive drainage features, low baseline industrial pollution, biodiversity sensitivities, and social sensitivities linked to land use, ezab, transport and community expectations.

## CLIMATE AND CLIMATE CHANGE

The climate in the Project Area is hot with low and variable rainfall, seasonal winds and infrequent cyclones. Climate projections indicate increasing temperatures and hot days, small changes in rainfall and wind speeds, and potentially more frequent or intense tropical systems. The future climate has been considered in the design of the Project.

### *LOCAL CLIMATE*

The Project Area has a mean annual rainfall of 90 mm and temperatures above 26°C. The southwest monsoon reduce summer temperatures and provide stronger, persistent wind compared to other times of the year.

*SUMMARY OF RECEPTORS*

Climate change is a general risk because it could affect the Project and nearby, communities. The Project will reduce Oman's emissions and has been designed to withstand heat, storms, extreme rainfall and flooding.

## AIR QUALITY

Air quality is generally good, with natural dust being the main concern. This was confirmed by eight days of air quality monitoring.

*VALIDATION OF AOI AND SUMMARY OF RECEPTORS*

No permanent residential receptors are located near the Project Area, and construction workers are the main potentially exposed receptors.

## NOISE AND VIBRATION

The Project Area is generally quiet and compliant with applicable industrial, commercial and residential reference standards. There are no permanent residential receptors within one kilometre, although ezab are present close to the Project boundary.

*VALIDATION OF AOI AND SUMMARY OF RECEPTORS*

Permanent noise receptors are sparse and outside the immediate Project Area. Construction noise and vibration will primarily affect workers and possibly temporary land users near active work fronts. Noise from wind turbines has been modelled and is expected to remain manageable within 2 km of the Project boundary.

## SURFACE WATER DRAINAGE, FLOOD RISK AND GROUNDWATER

The Project Area is crossed by dry wadis and natural drainage channels that convey water only after rainfall. Flooding during heavy rain is a natural feature of the site, and the principal concerns are minimising changes to the natural drainage of the site and making sure the Project is protected from rare rain events. Groundwater will be used for construction processes, following approval from the Department of Water Resources.

*EXISTING BASELINE INFORMATION*

Flood modelling for a 1-in-100-year event indicates generally low flood depth and velocity in the Project Area, with higher hazard areas associated with wadi channels and a small area southeast of the substation.

### *VALIDATION OF AOI AND SUMMARY OF RECEPTORS*

Key receptors include natural drainage channels, wadi vegetation, downstream flow paths, groundwater quality and nearby wells. Impacts are expected to be manageable if the final design maintains drainage connectivity, avoids obstruction of wadis, controls erosion and sediment, and prevents spills or other discharges.

## TERRESTRIAL ECOLOGY AND BIODIVERSITY

The Project Area has generally low ecological sensitivity with higher sensitivities associated with birds of conservation concern. Nearby biodiversity features, including Jabal Qahwan Nature Reserve and bird attractants such the Jalan Bani Bu Ali sewage treatment plant and the Tahwa landfill, provide important ecological context.

### *SCOPE AND METHODOLOGY*

The ecological understanding of the Project Area is based on habitat and vegetation mapping, camera trapping, seasonal bird and bat surveys and general ecological surveys which conducted over multiple seasons from March 2025 to April 2026.

### *PROJECT SITE*

The Project site has low vegetation cover overall, with plant communities concentrated in wadis and drainage channels. Bird surveys recorded resident and migratory birds, with Egyptian Vulture the key sensitive raptor due to its endangered status and its flight activity. Bat activity was low, mammals were limited to common small mammals and Arabian Red Fox, and the population of Egyptian Spiny-tailed Lizard is small.

### *VALIDATION OF AOI AND SUMMARY OF RECEPTORS*

The main ecological receptors are birds of conservation concern and surface water bodies that influence wildlife movements. The site's low overall vegetation and limited grazing value reduce habitat sensitivity, but operational bird collision risk requires mitigation measures and monitoring to effectively manage.

## WASTE AND WASTE MANAGEMENT

Waste management facilities and practice are typical for Oman: local municipal collection and transfer to landfill, and limited hazardous waste treatment capacity. The Project's main waste risks relate to construction waste, hazardous waste segregation and storage, wastewater disposal, and avoidance of third-party organic waste practices that attract scavenging birds.

### *EXISTING WASTE MANAGEMENT FACILITIES*

The closest relevant landfill is Tahwa Landfill in which non-hazardous Project waste will be ultimately disposed. Hazardous waste options are limited and will require licensed storage and transfer to approved specialist facilities. Jalan Bani Bu Ali is also served by a municipal STP with reported treatment capacity of 1,200 $m^3$/day.

### *SITE SPECIFIC OBSERVATIONS*

Surveys observed dumping of organic waste such as livestock carcasses and fish waste near the Project Area which can attract scavenging raptors such as Egyptian and Lappet-faced Vultures. These existing practices are not attributed to the Project but are relevant to manage bird collision risk during the Project's operational phase.

### *VALIDATION OF AOI AND SUMMARY OF RECEPTORS*

The key aspects are local waste infrastructure, wastewater treatment facilities and scavenging wildlife. Project waste can be managed through segregation, licensed transport, transfer notes, hazardous waste containment and improved systems for the disposal of organic waste.

## SOCIO-ECONOMIC SETTING

The Project is located in a rural social setting in Wilayat Jalan Bani Bu Ali characterised by small settlements, pastoral activities, local roads, traditional livelihoods and growing infrastructure development. Social risks are mainly linked to land use, livestock, abnormal-load traffic, community expectations around jobs and benefits, and perceptions of landscape, noise and shadow flicker.

### *EXISTING BASELINE INFORMATION*

Ash Sharqiyah South and Jalan Bani Bu Ali have growing populations and a mix of Omani and expatriate residents. Livelihoods include fishing, livestock rearing, agriculture, small-scale commerce, government employment, local industries and coastal tourism.

Field observations identified ezab and free-roaming livestock near the Project Area, as well as evidence of earlier clearance of some structures from the site. Stakeholder engagement indicates that grazing activity in the Project Area is lower than in surrounding areas, but land access and livestock related issues remain socially sensitive.

### *STAKEHOLDER ENGAGEMENT*

Engagement with authorities and local representatives identified generally supportive views toward renewable energy and development, alongside concerns about land use, access, birds, Jabal Qahwan Nature Reserve, noise, shadow flicker, landscape effects,

waste, road safety, employment and community benefits. Expectations for jobs and local investment require careful management and transparent communication.

### *VALIDATION OF AOI AND SUMMARY OF RECEPTORS*

Key social receptors are nearby communities, land users, livestock owners, road users, public facilities along transport routes, workers, local businesses and authorities. The most relevant risks are temporary construction disturbance, abnormal-load transport, land access, and community expectations which require implementation of a Stakeholder Engagement Plan (SEP), grievance mechanism and traffic management.

## ARCHAEOLOGY AND CULTURAL HERITAGE

The cultural heritage survey of the Project Area documented two cairns, an Islamic-era grave and scattered lithics. Survey results have informed mitigation measures, including demarcation, awareness, watching briefs and a chance-find process. Construction near known features must be controlled to avoid accidental damage.

### *VALIDATION OF AOI AND SUMMARY OF RECEPTORS*

The principal receptors are known findspots and any unknown archaeology encountered during construction. The risk is manageable through pre-construction marking, worker training and supervision, and a chance-find procedure.

## LANDSCAPE AND VISUAL AMENITY

The Project will introduce large turbines and associated infrastructure into a rural landscape. Landscape and visual effects are most relevant during operation because turbines will be highly visible and long term.

### *LANDSCAPE CHARACTER*

The site has a rural, sparsely developed landscape character with broad open views and natural landforms. Existing human influences include roads, tracks, ezab, the OETC substation and the existing overhead transmission line, but the wind farm will introduce a prominent additional industrial feature.

### *VISUAL AMENITY*

Visual receptors include road users, local communities, pastoral users and visitors. Turbines, aviation lighting, the substation and shadow flicker may be noticeable from parts of the surrounding landscape, although distance and receptor sensitivity vary.

### *VALIDATION OF AOI AND SUMMARY OF RECEPTORS*

The key receptors are nearby communities, road users and the wider rural landscape character. Operational effects are expected to be long term and require lighting control, engagement, road signage for shadow flicker where needed and a grievance mechanism.

## 5. ENVIRONMENTAL RELEASES

The Project will generate environmental releases during construction, operation and decommissioning. Construction releases are the most diverse and include dust, noise, wastewater, solid waste and hazardous wastes. Operational releases are limited and mainly associated with maintenance, while decommissioning will generate substantial end-of-life materials requiring reuse, recycling or disposal.

### CONSTRUCTION PHASE

Construction will produce dust from earthworks and unpaved roads, exhaust emissions from plant and generators, construction noise and vibration, sanitary wastewater, concrete washout, stormwater runoff, domestic waste, packaging, scrap, and small volumes of hazardous materials. These temporary releases require active management.

### *WASTE GENERATION*

Construction waste will include non-hazardous, recyclable and hazardous streams. Key controls include waste minimisation, segregation, covered and labelled storage, hazardous waste containment, licensed and documented transport, and disposal only at approved facilities. Sewage and wastewater generated on site will be collected by approved contractors for treatment at approved facilities.

### OPERATION PHASE

Operational releases are expected to be limited because the wind farm has no process emissions and a small, intermittent workforce. Main releases include noise from wind turbines, maintenance wastes including small volumes of hazardous materials, and possible accidental spills from oils, greases, paints or chemicals.

### *WASTE GENERATION*

Operational waste will comprise used oils, lubricants, hydraulic fluids, filters, batteries, packaging, small scrap metals and domestic waste. Waste volumes are expected to be low and manageable through the OESMP, licensed collection and waste transfer records.

### DECOMMISSIONING PHASE

Decommissioning will generate waste from turbines, foundations, balance-of-plant equipment, cables, roads and buildings. The approach should prioritise reuse and recycling of steel, metals, electrical components and suitable materials, with residual waste disposed of at licensed facilities.

#### *WASTE GENERATION*

End-of-life turbine blades and composite materials may be difficult to recycle and require a specific strategy. Foundation concrete, steel reinforcement, cables, substation equipment and road materials should be assessed for reuse, recycling or approved disposal in a future decommissioning study.

## 6. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

The impact assessment evaluates Project effects using defined methodologies for physical, biological, social and cultural aspects. It identifies impacts before and after mitigation, applies the mitigation hierarchy, and concludes that most residual impacts are slight, minor, or low with priority management attention required for bird collision risk, landscape and visual effects, abnormal-load traffic, and stakeholder expectations.

### APPROACH

The assessment is based on the Project description, baseline conditions, receptor sensitivity, professional judgement, modelling where available, and lender and national requirements. It considers construction, operation, decommissioning and cumulative effects. The impact assessment methods distinguish physical and biological impacts from social and cultural impacts, applies transparent scoring criteria, and reassesses residual significance after mitigation. It also considers cumulative impacts using a rapid cumulative impact assessment approach.

### PROJECT FOOTPRINT

The Project footprint is 40 ha, which is 3.75% of the overall Project Area. The footprint includes wind turbine pads, roads, cabling, laydown/storage areas and substation infrastructure. The relatively small footprint limits habitat and land-use impacts.

### ASSESSMENT OF ENVIRONMENTAL IMPACTS

The technical impact assessment identifies and scores Project impacts by aspect. The principal residual issues are construction disturbance to biodiversity receptors, operational bird collision risk, landscape and visual change, shadow flicker and

construction traffic/community safety. Most pollution-related impacts are temporary, localised and manageable through standard controls.

*CLIMATE AFFAIRS*

The Project will have embodied carbon from manufacturing, transport and construction but will provide net climate benefits through renewable power generation during operation. Physical climate risks include extreme heat, storms, high winds, flooding and sandstorms, which can affect worker safety, construction conditions, turbine performance, drainage and asset integrity. These risks require climate-resilient design, emergency planning and adaptive management.

*AIR QUALITY*

Construction dust is the main air quality risk. No permanent receptors close to the highest dust-risk areas, and baseline air quality is good. With dust suppression, speed controls, covered loads, good fuel and chemical handling residual impacts are assessed as slight.

*NOISE AND VIBRATION*

Construction noise and vibration will be temporary and localised, with limited sensitive receptors near active works. Operational turbine noise was modelled. No significant impacts are expected with appropriate turbine maintenance, monitoring and complaint response. Residual noise impacts are slight to minor.

*GEOLOGY, SOILS AND GROUNDWATER*

Construction could cause local soil contamination from accidental and incidental spills. Groundwater risks are limited if excavation, fuel storage, wastewater and hazardous materials, and abstraction are properly controlled. Residual impacts are slight with good housekeeping, bunding, spill response, and reuse of suitable excavated material.

*HYDROLOGY, SURFACE WATER DRAINAGE AND FLOOD RISK*

The Project could affect natural drainage if roads, foundations, cable trenches or stockpiles obstruct wadis or concentrate runoff. Flood modelling indicates overall low flood risk and has informed detailed drainage design, culverts, and erosion controls . Residual impacts are slight.

*TERRESTRIAL ECOLOGY AND BIODIVERSITY*

Construction impacts to ecology are minor. Operational impacts focus on bird collision risk, particularly raptors of conservation concern. Mitigation includes standard construction controls including avoidance of trees and compensation measures if necessary, bird mortality monitoring and adaptive collision-risk mitigation management

during operations, together with improved organic waste management in the area. Residual biodiversity impacts range from slight to minor, with bird collision risk requiring ongoing monitoring and escalation if mortality thresholds are exceeded.

*ARCHAEOLOGY AND CULTURAL HERITAGE*

Ground disturbance may damage known or unknown archaeological resources. The risk is assessed as low with mitigation, including demarcation of known findspots, cultural heritage induction, toolbox talks for works near findspots, supervisor watching briefs and a chance-find procedure.

*LANDSCAPE AND VISUAL AMENITY*

Construction effects will be temporary and can be reduced through dust management and lighting controls. Operational wind turbines will create long-term landscape and visual change, and shadow flicker may affect road users. Residual impacts are managed through stakeholder engagement, sensitive lighting design based on dark-sky principles where practicable, signage to control shadow flicker risk and a grievance mechanism.

*WASTE AND WASTE MANAGEMENT*

Waste impacts could arise from inappropriate handling, storage, transport or disposal of non-hazardous waste, hazardous waste and sanitary wastewater. With waste minimisation, segregation, licensed transporters, use of approved disposal facilities, hazardous waste inventories, transfer notes, spill response and wastewater collection controls, residual waste impacts are expected to be low or slight.

*SOCIO-ECONOMY*

The Project is expected to generate positive impacts during the construction phase through employment, training and local spending, and a smaller positive operational employment benefit. Potential adverse impacts include land-use change, livestock loss or injury, abnormal-load traffic, community dissatisfaction from unmet job or benefit expectations, and grievances related to noise, shadow flicker and visual effects. Mitigation includes a local content and employment plan, traffic management, community engagement, grievance mechanisms, livestock and access controls, and a post-ESIA community needs assessment.

*DECOMMISSIONING IMPACTS*

Decommissioning impacts will depend on the future decommissioning method, technology condition and regulatory requirements. Key risks include waste volumes, composite turbine blade disposal, traffic, dust, noise, soil disturbance and reinstatement.

A future decommissioning plan should prioritise reuse, recycling, safe waste handling, licensed disposal and site reinstatement.

*ASSESSMENT OF CUMULATIVE IMPACTS*

Cumulative impacts may arise from the Project combined with roads, overhead lines, substations, nearby infrastructure and future development. Most cumulative impacts are assessed as minor, including air quality, natural habitat, terrestrial fauna, traditional livelihoods, socio-economics and waste infrastructure. Cumulative bird collision risk remains a priority for monitoring, while cumulative landscape and visual change is assessed as medium due to long-term industrialisation of the rural landscape.

# 7. FRAMEWORK ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The framework ESMP translates ESIA mitigation into management requirements for construction and operation. It establishes compliance obligations, roles, training, monitoring, inspections, audits, emergency response, stakeholder engagement, change management, reporting and other supplementary management plans.

## OVERVIEW

The framework ESMP provides the structure for implementing mitigation and monitoring commitments during construction, operation and decommissioning. It must be developed further by the EPC Contractor and O&M Contractor before relevant activities commence.

## APPROACH TO ENVIRONMENTAL MANAGEMENT

The approach requires a project-specific environmental and social management system that integrates legal obligations, permit conditions, lender requirements, ESIA commitments and contractor controls. Management will follow a continual improvement cycle of planning, implementation, checking, corrective action and reporting.

## ENVIRONMENTAL ASPECTS AND IMPACTS

The ESMP is based on the assessed environmental and social aspects, including air quality, noise, soils, hydrology, biodiversity, cultural heritage, landscape, waste, socio-economy and cumulative impacts.

## MITIGATION

All mitigation commitments identified in the ESIA must be incorporated into the CESMP and OESMP, assigned to responsible parties, implemented through method statements and monitored for effectiveness. Mitigation may be refined through monitoring results, grievances, regulatory requirements and adaptive management.

### SUPPLEMENTARY MANAGEMENT PLANS

Supplementary plans required include the CESMP, OESMP, Stakeholder Engagement Plan, Waste Management Plan, Water Supply and Management Plan, Emergency Preparedness and Spill Response Plan, Air Quality and Dust Management Plan, Noise and Vibration Management Plan, Traffic and Transportation Management Plan, Efficient Resource Use Plan, Biodiversity Management Plan and Cultural Heritage Management Plan.

## 8. STAKEHOLDER ENGAGEMENT PLAN

A Stakeholder Engagement Plan (SEP) has been prepared for the Project to ensure that stakeholders are informed and have opportunities to participate throughout the Project lifecycle. The SEP identifies stakeholders, summarises engagement undertaken to date, and sets out how information will continue to be shared, how feedback will be received, and how grievances will be managed.

Stakeholder engagement undertaken during preparation of the ESIA included meetings with government authorities, local representatives and community organisations to introduce the Project, collect baseline information and understand local issues and concerns. The feedback received has informed the ESIA and the Project design.

### ESIA DISCLOSURE

The ESIA Report (Rev B) in English and the Non-Technical Summary (NTS) in Arabic will be made available to stakeholders and the public for a minimum period of 30 calendar days through an online disclosure portal.

Stakeholders will be able to provide comments throughout the disclosure period by completing the feedback form, contacting **Saba Jalan Wind Power SAOC** by phone or WhatsApp on **+968 9676 6713,** or by email at **info@sjwind.com.** Anonymous feedback will also be accepted. All comments received during the disclosure period will be reviewed and considered before finalising the ESIA.

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