Masdar Hybrid Project

Environmental and Social Impact Assessment Report

Abu Dhabi Future Energy Proponent PJSC – Masdar

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		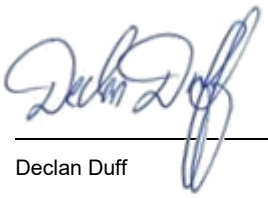	
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Table of Contents

Executive Summary xi
1. Introduction 7
1.1 Project Overview 7
1.2 Project Rationale 7
1.3 ESIA Scope of Work 9
1.4 Role Players 14
1.5 Risks and Limitations 15
2. Project Description 16
2.1 Project Location 16
2.2 Project Activity 18
3. Description of Alternatives 50
3.1 The 'No Project' Alternative 50
3.2 Site Location Alternatives 50
3.3 Technology Alternatives 54
4. Legal and Policy Framework 55
4.1 International Conventions and Protocols 55
4.2 International Standards and Guidelines 57
4.3 Federal Environmental Regulations 61
4.4 Local Environmental Legislation and Guidelines 65
4.5 Local Social Legislation and Guidelines 66
4.6 EAD Technical Guidance Documents 68
4.7 Environmental Standards and Pollution Limits 69
5. ESIA Methodology 80
5.1 Approach 81
5.2 The Mitigation Hierarchy 82
5.3 Key Stages of the ESIA Process 83
5.4 'Impacts' versus 'Effects' 83
5.5 Project Aspects 84
5.6 Receptors 85
5.7 Identification of Potential Impacts 85
5.8 Terms of Reference for ESIA 90
5.9 Cumulative and Unplanned Events Impact Assessment 105
5.10 Stakeholder Engagement Approach 107
6. Description of the Surrounding Environment 109
6.1 Site Context 109
6.2 Area of Influence 110
6.3 Physical and Biophysical Environment 113
6.4 Social Environment 159
6.5 Traffic 181
6.6 Landscape and Visual Amenity 184
6.7 Waste Management 186
6.8 Cultural Heritage and Archaeology 189
7. Impact Identification, Analysis and Evaluation 194
7.1 Climate Change Risk Assessment 194
7.2 Geology and Soils 206
7.3 Hydrogeology 210
7.4 Terrestrial Ecology 213
7.5 Social Aspects 224
7.6 Landscape and Visual Amenity 230
7.7 Waste Management 235

7.8 Heritage and Archaeology 238
7.9 Ecosystem Services 242
7.10 Summary of Impacts and Mitigation Measures 243
7.11 Unplanned Activities 254
7.12 Cumulative Impact Assessment (CIA) 257
8. Environmental and Social Management Framework 263
8.1 Roles and Responsibilities 263
8.2 Training and Competence 266
8.3 Communication 268
8.4 Environmental and Safety Management Plans 268
8.5 Monitoring and Reporting 272
8.6 Audit and Inspection 276
9. Conclusion 278
10. References 279
Appendix A : EAD No Objection Certificate 282
Appendix B : Stakeholder Engagement Plan 283
Appendix C : Construction Environmental and Social Management Framework 284
Appendix D : Critical Habitat Assessment 285
Appendix E : Human Rights Impact Screening 286
Appendix F : Ecosystem Services Report 287
Appendix G : Terrestrial Ecology Reports and Studies 288

List of Figures

Figure 0-1: Location of the Project Within the Regional Context i
Figure 0-2: Project Location (Indicating Hybrid Project 1 and Hybrid Project 2) ii
Figure 1-1: Location of the Project Within the Regional Context 8
Figure 2-1: Project Location (Indicating Hybrid Project 1 and Hybrid Project 2) 17
Figure 2-2: Overview of a Solar PV Power Plant 19
Figure 2-3: PV Module Technologies 20
Figure 2-4: Illustration of Bifacial Solar Panel 20
Figure 2-5: PV Array Components 21
Figure 2-6: Central Inverter System Diagram 23
Figure 2-7: Sungrow Inverter Options 23
Figure 2-8: BESS Block Layout 26
Figure 2-9: CFD Simulations of Wind Flow and Temperature Distribution 27
Figure 2-10: Thermal Analysis of Battery Modules Showing Colour-coded Temperature Distribution to Assess Thermal Performance 28
Figure 2-11: BESS Island Layout 29
Figure 2-12: BESS Module, Highlighting Various Components and Applicable Safety Standards 30
Figure 5-1: Impact Identification and Assessment Process 80
Figure 5-2: Simplified Impact Assessment Process 81
Figure 5-3: The Mitigation Hierarchy 82
Figure 5-4: Approach to Stakeholder Engagement 108
Figure 6-1: Typical Landscape of the Project Area 109
Figure 6-2: Climate Classification in Abu Dhabi 113
Figure 6-3: Climate in the Abu Dhabi Emirate Indicating Average Rainfall and Temperature 114
Figure 6-4: Monthly Climatology of Average Surface Air Temperature for Abu Dhabi (1991-2020) 115
Figure 6-5: Monthly Climatology of Precipitation for Abu Dhabi (1991-2020) 116
Figure 6-6: Prevailing Wind Direction for Abu Dhabi 117
Figure 6-7: Noise Survey Locations 123
Figure 6-8 Sound Level Meter Calibration Certificate 124
Figure 6-9: Geomorphical Feature of the UAE 127
Figure 6-10: Geology of the Project Area 129
Figure 6-11: Soil Types Within the Project Area 131
Figure 6-12: Structural Map of the Arabian Plate 132
Figure 6-13: Map Showing Historical Earthquakes 133
Figure 6-14: UBC Seismic Zone Classification of UAE and its Vicinity 134
Figure 6-15: Earthquakes – Seismic Events and Tectonic Plate Boundaries 135
Figure 6-16: Surface Water Features Within the Project Area 140
Figure 6-17: Groundwater Within the Project Area 142
Figure 6-18: Protected Areas Located Within the Project Vicinity 146
Figure 6-19: Land Cover within the Project Area 150
Figure 6-20: Sensitive Area Types within the Project Area 152
Figure 6-21: Haloxylon Persicum Populations and Proposed Potential Translocation Sites (NEA, 2025) 153
Figure 6-22 Location and Status of SPL Burrows – North East of Hybrid Project 2 (NEA, 2025) 155
Figure 6-23: Critical Habitats Located Within the Project Area 158
Figure 6-24: Population Numbers by Region 160
Figure 6-25: Abu Dhabi Population Growth 161
Figure 6-26: GDP Trends (2020 – 2024) 162
Figure 6-27: Tangible Assets of the Project 168
Figure 6-28: Settlements in Relation to the Project Sites 179
Figure 6-29: Road Network Within the Project Area 183
Figure 6-30: Quantity of Non-hazardous Waste Generated by Month and Source During the Year 2022 187
Figure 6-31: Potential Burqa Site Found Within Hybrid Project 1 190
Figure 6-32: Buffer Area to be Implemented around the Burqa identified in Hybrid Project 1 191
Figure 6-33: Known Heritage and Archaeological Resources Within the Project Area 193
Figure 7-1: Projected Average Mean Surface Air Temperature, UAE (Reference Period: 1995-2014) 194
Figure 7-2: Projected Precipitation Anomaly for 2020-2039, Abu Dhabi (Reference Period: 1950-2014), SSP1-2.6 and SSP5-8.5, Multi-Model Ensemble 197
Figure 7-3: Projected Precipitation Anomaly for 2040-2059, Abu Dhabi (Reference Period: 1950-2014), SSP1-2.6 and SSP5-8.5, Multi-Model Ensemble 197

List of Tables

Table 0-1: Impacts Identified During the ESIA 4
Table 0-2: Impact Assessment Summary 6
Table 1-1: Energy Demand in the Region 7
Table 1-2: Disciplines Scoped in and out of the ESIA 11
Table 1-3: ESIA Report Structure 13
Table 1-4: Proponent Contact Information 14
Table 1-5: Environmental Consultant Contact Information 14
Table 2-1: Project Location Coordinates 16
Table 2-2: Summary of Key Project Components per Site 18
Table 2-3: Preliminary List of Plant and Equipment 38
Table 2-4: Project Schedule 49
Table 3-1: Alternative Locations Considered 51
Table 4-1: Relevant Conventions and Protocols Ratified by UAE 56
Table 4-2: Applicability of each IFC PS to the Project 58
Table 4-3: Federal Laws Applicable to the Project 61
Table 4-4: Federal Law No. 24 Articles Applicable to Project 62
Table 4-5: List of Applicable Local Legislation 65
Table 4-6: UAE Social Laws and Regulations 67
Table 4-7: Ambient Air Quality Standards 69
Table 4-8: Maximum Allowable Limits of Air Pollutants Emitted from Stationary Sources 70
Table 4-9: Maximum Allowance Limits for Dust in Working Areas 71
Table 4-10: Allowable Limits for Noise Level in Different Areas 71
Table 4-11: Soil Quality Guidelines 73
Table 4-12: Dutch Soil and Groundwater Standards 75
Table 5-1: Environmental and Social Receptors with the Potential to be Impacted by Project Activities 85
Table 5-2: Impact Magnitude Criteria Quantitative Definitions 86
Table 5-3 Impact Magnitude Rankings 86
Table 5-4: Sensitivity Level Categories 87
Table 5-5: Impact Significance Matrix 88
Table 5-6: Impact Significance Definitions 88
Table 5-7: Example of Impact Summary Table 89
Table 5-8: Hazard Criteria 90
Table 5-9: Exposure Criteria 91
Table 5-10: Vulnerability Criteria 91
Table 5-11: Exposure x Vulnerability Rating 91
Table 5-12: Climate Risk Rating 91
Table 5-13: Impact Magnitude 92
Table 5-14: Sensitivity Level Categories 93
Table 5-15: Receptor Evaluation 95
Table 5-16: Terrestrial Ecology Impact Magnitude Criteria 96
Table 5-17: Terrestrial Ecology Impact Significance Matrix 97
Table 5-18: CHA Plan of Study 98
Table 5-19: Receptor Sensitivity 98
Table 5-20: Likely Resource/Receptor and Sensitivity 99
Table 5-21: Landscape Sensitivity 99
Table 5-22: Visual Sensitivity 99
Table 5-23 : Landscape Impact Magnitude 100
Table 5-24: Visual Impact Magnitude 101
Table 5-25: Impact Significance 101
Table 5-26: Impact Magnitude Criteria Quantitative Definitions 103
Table 5-27: Impact Magnitude level 103
Table 5-28: Level of Impact Occurrence Likelihood 104
Table 5-29: Impact Significance Matrix 104
Table 5-30: Likelihood (L) Level Categories for Unplanned Events 106
Table 5-31: Severity Level Categories for Unplanned Events 106
Table 5-32: Potential Unplanned Event Impact Significance 106

Table 5-33: Steps in the Development of a SEP 108
Table 6-1: Project Area Climate Summary 118
Table 6-2: Typical Air Quality Baseline Parameters at Hybrid Project 1 and Hybrid Project 2 120
Table 6-3: Noise Survey Results 122
Table 6-4: UAE Soil Types 126
Table 6-5: Geology Types of the Project Area 128
Table 6-6: Soil Types of Hybrid Project 1 and Hybrid Project 2 130
Table 6-7: UBC Seismic Zone Classification 133
Table 6-8: Surface Water Features Relevant to Hybrid Project 1 and Hybrid Project 2 137
Table 6-9: Population and Housing Trends (2011–2023) 161
Table 6-10: Labour Market Structure (2023) 162
Table 6-11: GDP Composition (2024, Constant Prices) 163
Table 6-12: Inflation (CPI, Base 2021 = 100) 163
Table 6-13: List of Tangible Assets 169
Table 6-14: Social Receptors 180
Table 6-15: Yearly Waste Generation Over the Past 6 Years (2016-2022) in Abu Dhabi 186
Table 6-16: Quantities of Non-hazardous Waste Generated by Source and Methods of Disposal in 2022 187
Table 6-17: Quantities of Hazardous Waste Generated by Source and Methods of Disposal in 2022 187
Table 7-1: Projected Anomaly in Temperature Intensity Metrics for Abu Dhabi, UAE (Ref. period 1950-2014) ... 195
Table 7-2: Climate Risks, Financial Materiality and Mitigation Measures for Project Construction Phase (Timeframe Considered: 2021-2040) 200
Table 7-3: Climate Risks, Financial Materiality and Mitigation Measures for Project Operation Phase (Timeframe Considered: 2041-2059) 202
Table 7-4: Climate Change and Impact Materiality for Moderate, High and Major ESIA Risks (Project Operation Phase) 204
Table 7-5: Soil and Groundwater Summary Table 208
Table 7-6: Hydrogeology Summary Table 212
Table 7-7: Terrestrial Ecology Summary Table 219
Table 7-8: Monitoring Programme for Compliance with Selected Mitigation Measures 223
Table 7-9: Types of Social Impact 224
Table 7-10: Social Summary Table 228
Table 7-11: Monitoring Programme for Compliance with Selected Mitigation Measures 229
Table 7-12: Landscape and Visual Summary Table 233
Table 7-13: Waste Management Summary Table 237
Table 7-14: Heritage and Archaeology Summary Table 240
Table 7-15: ESR Summary Findings 243
Table 7-16: Summary of Environmental Impacts During Planned Events 244
Table 7-17: Socio-economic Impacts During Planned Events 251
Table 7-18: Environmental Impacts During Unplanned Events 255
Table 7-19: Social Impacts During Unplanned Events 256
Table 7-20: Types of Developments Considered in this Assessment 257
Table 7-21: VECs Selected for the CIA 259
Table 7-22: Summary of VECs and Thresholds 260
Table 7-23: CIA for Selected VECs 262
Table 8-1: Roles and Responsibilities During the Construction Phase 264
Table 8-2: Roles and Responsibilities During the O&M Phase 265
Table 8-3: List of Training for Construction and O&M Phases 267
Table 8-4: List of Construction and O&M Plans 269
Table 8-5: Monitoring and Reporting Requirements (Construction Phase) 273
Table 8-6: Monitoring and Reporting Requirements (O&M Phase) 275
Table 9-1: Impact Assessment Summary 278

Acronyms and Abbreviations

Abbreviation	Description
AAQS	Ambient Air Quality Standards
AC	Alternating Current
ADNOC	Abu Dhabi National Oil Company
AoI	Area of Influence
API	American Petroleum Institute
BAT	Best Available Techniques
BESS	Battery Energy Storage System
BMP	Biodiversity Management Plan
CBD	Central Business District
CESMP	Construction Environmental and Social Management Plan
CFD	Computational Fluid Dynamics
CHA	Critical Habitat Assessment
CMP	Construction Management Plan
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CWM	Centre for Waste Management
DC	Direct Current
DCT	Department of Culture and Tourism
DMT	Department of Municipalities and Transport
DoE	Department of Energy
E&S	Environmental and Social
EAD	Environment Agency – Abu Dhabi
EBS	Emergency Battery System
EDG	Emergency Diesel Generator
EP	Equator Principles
EPC	Engineering, Procurement and Construction
ES	Ecosystem Services
ESF	Electrical Special Facilities
ESH	Environmentally Sensitive Habitat
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESR	Ecosystem Services Review
EWEC	Emirates Water and Electricity Company
GHG	Greenhouse Gas
GIIP	Good International Industry Practice
GM	Grievance Mechanism
GW	Gigawatt
GWh	Gigawatt-hour
GWp	Gigawatt-peak
HGV	Heavy Goods Vehicle
HSSE	Health, Safety, Security, and Environment
HV	High Voltage
HVAC	Heating, Ventilation, and Air Conditioning
IEC	International Electrotechnical Commission
IFC	International Finance Corporation
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent Power Producer
ISO	International Organisation for Standardisation
IUCN	International Union for Conservation of Nature
KEZAD	Khalifa Economic Zones Abu Dhabi
km	Kilometre
km^2	Square Kilometre
LFP	Lithium iron phosphate
LMS	Labour Management System
LMVs	Light Motor Vehicles

Abbreviation	Description
LVIA	Landscape and Visual Impact Assessment
m	Metre
mm	Millimetre
MMM	Mitigation Management Matrix
MRF	Material Recovery Facility
MVA	Megavolt-ampere
MW	Megawatt
MWac	Megawatt – Alternating Current
MWh	Megawatt-hour
NOC	No Objection Certificate
NO_x	Nitrogen Oxides
O&M	Operation and Maintenance
OESMP	Operation Environmental and Social Management Plan
OHS	Occupational Health and Safety
OHTL	Overhead Transmission Line
PCC	Plain Cement Concrete
PCS	Power Conversion System
PJSC	Public Joint Stock Company
PM_{10} and $PM_{2.5}$	Particulate Matter
PS	Performance Standard
PSS	Pooling Substation
PV	Photovoltaic
RCC	Reinforced Cement Concrete
RICA	Rapid Cumulative Impact Assessment
RMU	Ring Main Unit
SCAD	Statistics Centre – Abu Dhabi
SEP	Stakeholder Engagement Plan
SO_2	Sulphur Dioxide
TG	Technical Guidance
UAE	United Arab Emirates
URS	URS Corporation (part of AECOM)
VECs	Valued Environmental And Social Components
VOCs	Volatile Organic Compounds
WGS	World Geodetic System
Wp	Watt-peak
WtE	Waste-to-Energy

Definitions of Terms

Term	Definition
Area of influence	The extent of a physical area occupied by an environmental component that is likely to be impacted by at least one of the phases of the proposed Project (i.e., construction, operation and decommissioning activities and processes). The boundary of the area of probable impact is determined by measurements, previous studies, models, or best professional judgment and may vary by environmental component.
Assessment of influence	The physical area that the consultant and Project proponent' have identified for assessment of potential environmental impacts.
Associated facilities	Associated facilities are those facilities that are not funded as part of the project but that would not have been constructed, expanded, or operated if the project did not exist and without which the project would not be viable. These facilities may be public or private, and they may be funded, owned, or operated by the Project proponent or by third parties (IFC, 2012).
Construction	The time period corresponding to any event, process, or activity that occurs during the construction phase (e.g., building of site, buildings, processing units) of the proposed Project. This phase terminates when the Project goes into full operation or use.
Environmental component	An attribute or constituent of the environment (i.e., air quality; marine water; waste management; geology, seismicity, soil and groundwater; marine ecology; terrestrial ecology; noise; traffic; socio-economic) that may be impacted by the proposed project.
Environmental hazard	Any substance, physical effect, or condition with potential to harm people, property, or the environment.
Environmental impact	Positive or negative impact that occurs to an environmental component as a result of the proposed Project. This impact can be directly or indirectly caused by the proposed Project's different phases (i.e., construction, operation and decommissioning).
EPC contractor	Within the context of IFC's guidelines and practices, an EPC contractor is generally understood as an entity responsible for the comprehensive delivery of a project, encompassing engineering design, procurement of necessary materials, and construction activities.
Hazard	Same as Environmental Hazard.
Hazardous waste	Waste that poses potential harm to human health and the environment.
Operation	The time period corresponding to any event, process, or activity that occurs during the operation phase (fully functioning) of the proposed Project (operation phase follows the construction phase and then terminates when the proposed Project goes into the decommissioning phase).
Project site	The physical area within which all phases (i.e., construction, operation and decommissioning), processes and activities of the proposed Project will take place.
Solid waste	Debris, garbage and other discarded solid materials

Executive Summary

Introduction

Abu Dhabi Future Energy Company PJSC – Masdar is proposing the development of the Masdar Hybrid Project, a large-scale renewable energy facility in the eastern Al Dhafra Region of the Abu Dhabi Emirate (Figure 0-1), in the United Arab Emirates (UAE). The Project is part of the UAE's long-term strategy to diversify its energy mix, reduce dependence on hydrocarbons, and achieve net-zero carbon emissions by 2050.

The Project will combine approximately 5 gigawatts-peak (GWp) of solar photovoltaic (PV) capacity with a 20 gigawatt-hour (GWh) Battery Energy Storage System (BESS). Its primary purpose is to supply reliable, clean electricity to a local data centre, with additional contributions to the regional grid, underpinned by a 30-year power purchase agreement with Emirates Water and Electricity Company (EWEC).

Project Description

The proposed Project comprises two large-scale solar photovoltaic (PV) developments – Hybrid Project 1 and Hybrid Project 2 – located in the inland desert of the Al Dhafra Region, Abu Dhabi Emirate (Figure 0-1). Together, the sites cover approximately 60 km² of largely undeveloped sandy terrain situated between the Baniyas/Mussafah corridor and Al Wathba/Al Khatim. The area is sparsely populated, with the nearest settlements being Baniyas (12–18 km northwest) and Al Mafraq (17–24 km northwest), while Mussafah lies about 30 km northeast.

At full build-out, the Project will rank among the world's largest single-site solar PV facilities, underscoring the UAE's leadership in renewable energy and energy transition commitments. Each site will host extensive PV arrays supported by inverter and transformer stations, BESS, substations, internal access roads, fencing, and ancillary facilities, all constructed under separate Engineering, Procurement and Construction (EPC) contracts but coordinated under unified project management.

The PV technology will comprise bifacial crystalline silicon modules mounted on single-axis trackers to maximise energy yield under Abu Dhabi's high irradiance conditions. More than 5.6 million modules will be installed across the two sites. Electricity generated will be collected through strings and inverters, stepped up to grid voltage, and transmitted to the Abu Dhabi grid via dedicated substations (PSS/ESF) and 400 kV underground connections managed by Abu Dhabi Transmission and Despatch Company (TRANSCO).

The integrated BESS – designed for a 30-year lifetime – will enhance system flexibility and grid stability by storing excess solar power and releasing it when demand peaks. The BESS will employ lithium iron phosphate (LFP) technology, with modular containerised enclosures designed for high safety, corrosion resistance, and operation under extreme desert conditions. Advanced cooling and fire protection systems will mitigate risks of overheating or thermal runaway, while layout and spacing conform to NFPA and IFC standards.

Construction activities will include site clearance, levelling, fencing, access road development, piling, foundations, and phased installation of PV panels, BESS units and electrical infrastructure. Temporary facilities such as site offices and laydown areas will be established for construction staff and equipment. The workforce is expected to peak at 2,000–3,000 personnel during construction, reducing to 50–70 staff during operation. Construction will generate dust, noise, and waste, all of which will be managed through standard environmental controls and compliance with Masdar's environmental management plans.

Resource requirements during construction will include potable and non-potable water supplied by approved vendors. Should groundwater resources be required during construction, abstraction and use will be carried out in accordance with all regulatory requirements and will be subject to obtaining the necessary permits and approvals. Any dewatering activities, if required, will likewise be undertaken in compliance with applicable regulatory permitting requirements. Temporary power will be provided by diesel generators, and all fuels, lubricants, and chemicals will be managed in accordance with approved Hazardous Materials and Waste Management Plans..

Appropriate environmental controls will be implemented to manage dust, noise, and waste during construction and operation. During the operational phase, water consumption will primarily be for PV panel cleaning and BESS cooling, with minimal fuel usage limited to emergency diesel generators.

The Project will be implemented in phases beginning in late 2025 with early works, followed by procurement and detailed design through 2026–2027, construction and installation during 2027–2028, and commissioning and grid connection in 2028–2029. Full commercial operation is scheduled for 2029, with an expected operational life of 30 years.

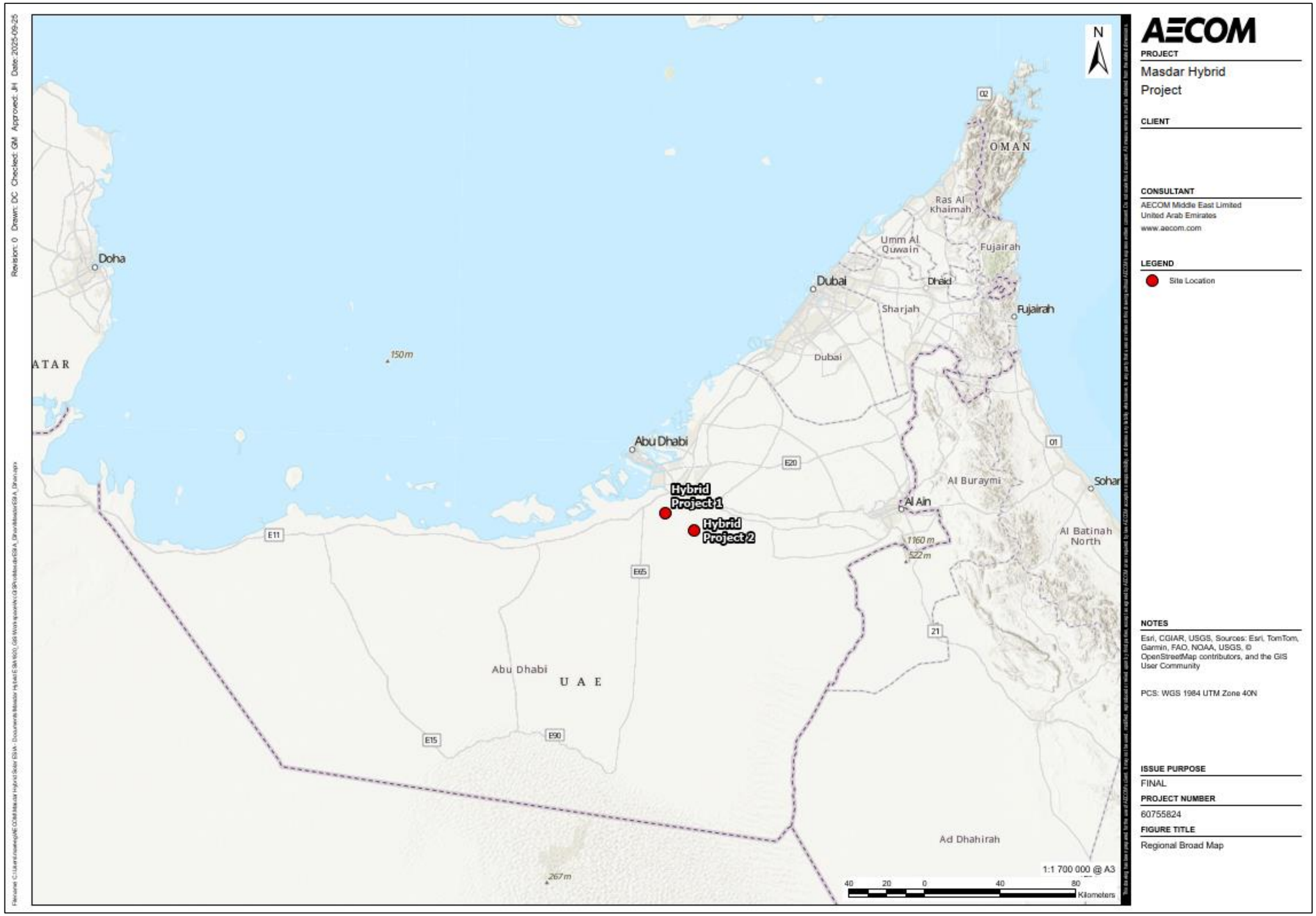

Figure 0-1: Location of the Project Within the Regional Context

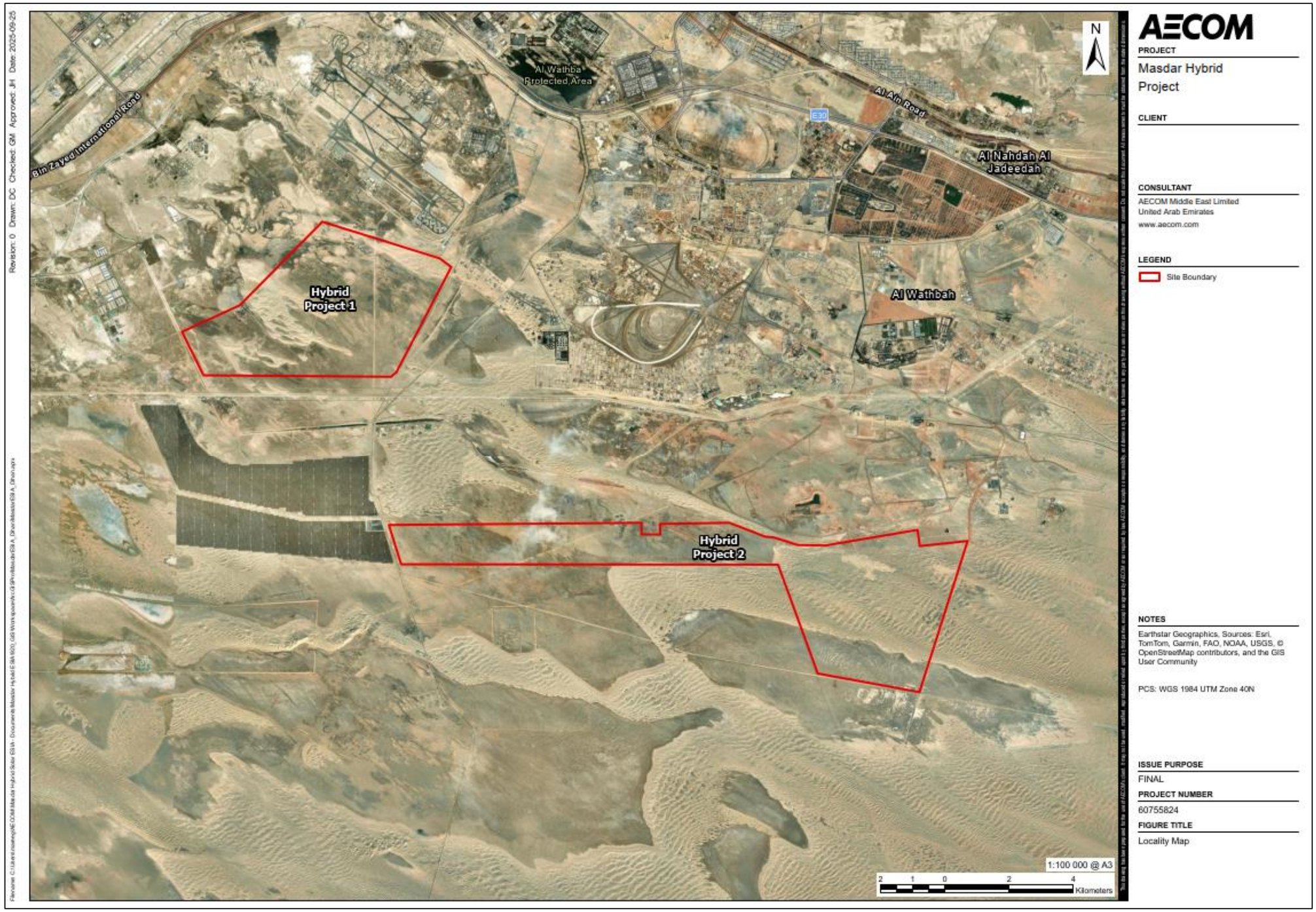

Figure 0-2: Project Location (Indicating Hybrid Project 1 and Hybrid Project 2)

Project Rationale

The Project responds to:

- Rising regional energy demand, particularly in Abu Dhabi, which saw energy use increase from 67.5 million MWh in 2021 to over 70.3 million MWh in 2022;
- UAE Energy Strategy 2050, aiming to achieve climate neutrality by phasing out coal and expanding renewable energy generation; and
- Grid stability and data centre demand, requiring continuous power supply even during peak summer demand (April–October).

By providing both renewable generation and battery storage, the Project will ensure consistent energy delivery, reduce reliance on fossil fuels, and support the UAE's Net Zero 2050 vision.

Legal and Policy Framework

The Project must comply with UAE federal and Abu Dhabi environmental laws, as well as international standards and lender requirements. Key frameworks include:

- International Finance Corporation's (IFC) Performance Standards on environmental and social sustainability;
- Equator Principles for responsible project financing;
- Environment Agency – Abu Dhabi (EAD) environmental thresholds and permitting requirements; and
- International conventions such as the Paris Agreement and International Union for Conservation of Nature (IUCN) biodiversity standards.

Environmental and Social Baseline

A reconnaissance survey was conducted on 28 and 29 August 2025. The Project sites are situated in a sparsely populated desert landscape characterised by open sand dune fields, gravel plains, sabkha depressions and occasional low calcareous sandstone outcrops. Although largely undeveloped, the wider surroundings include scattered small-scale agricultural holdings, utility corridors and access tracks linked to the regional E11 and E22 highway network.

The reconnaissance survey identified a number of localised social and cultural features, including partially demolished and abandoned settlements within Hybrid Project 1, and active and inactive azbahs and a nearby temporary tent around Hybrid Project 2.

In terms of environmental sensitivities, no protected areas occur within the Project site footprints, but sensitive natural and cultural features are present in the wider landscape, including the Fossil Dune Protected Area approximately 8–12 km northeast of Hybrid Project 2, scattered fossil dune formations in the surrounding area, and the Burqa site landform within Hybrid Project 1 which may hold archaeological potential.

The baseline features of Hybrid Project 1 and Hybrid Project 2 are:

Air Quality

The Project sites are located in a region characterised by naturally good air quality, with low levels of anthropogenic pollutants due to the sparse population and limited industrial activity in the immediate vicinity. However, regional influences can negatively effect air quality such as emissions from road transport along the E11 and E22 highways and from industrial hubs such as Mussafah and the Khalifa Economic Zones Abu Dhabi (KEZAD), located further north and northwest of the Project sites. The most common local air quality issues arise from windblown dust, particularly during periods of high winds and sandstorms, which can result in elevated levels of particulate matter (PM_{10} and $PM_{2.5}$). These natural dust events form part of the regional baseline conditions. Ambient concentrations of other pollutants such as nitrogen oxides (NO_x), sulphur dioxide (SO_2) and ozone are generally low, though cumulative effects from regional industrial activity may occasionally be detected.

Climate

The climate of the Project area is hyper-arid, with extremely high summer temperatures regularly exceeding 45°C and prolonged dry periods throughout most of the year. Rainfall is scarce and unpredictable, averaging less than 100 mm annually, usually occurring in brief winter storms. Evaporation rates far exceed precipitation, leading to saline soils and the formation of inland sabkha depressions. The climatic regime drives baseline environmental conditions, influencing water availability, vegetation distribution and ecological sensitivity.

Noise

Ambient noise levels across the Project sites are extremely low compared to urban Abu Dhabi, reflecting their remote desert setting. Background conditions are dominated by natural sounds such as wind over dunes and occasional fauna. Minor contributions come from distant road traffic on the E11 and E22 corridors, and from agricultural activities within a 10–15 km radius, such as pumps or small vehicles. No significant continuous anthropogenic noise sources are present in the immediate Project area. This baseline condition highlights the sensitivity of the sites to construction-related increases in noise, particularly in relation to nearby ranches and Azbahs.

Geology, Soils and Landform

The Project sites are situated within the Arabian Desert and East Sahero-Arabian Xeric Shrublands ecoregion. Landforms include interdunal gravel plains, inland sabkha, calcareous sandstone ridges, and aeolian dunes. These geomorphic features support fragile soil systems that are highly susceptible to disturbance and slow to recover once degraded. Sabkha areas in particular are saline and largely inhospitable to vegetation, while dune margins can obscure buried archaeological deposits. The soils provide limited fertility, though some halophytic shrubs have established along sabkha fringes and dune slopes. Erosion, compaction and habitat loss are recognised risks under development conditions.

Water Resources

Surface water resources are absent in the Project area, reflecting the arid climatic conditions. Groundwater is present at depth, typically brackish to saline, and of limited suitability for domestic or agricultural use without treatment. Local agricultural holdings often rely on tanker-supplied desalinated water. Wastewater is managed through septic systems or tankering to regional treatment facilities. The absence of freshwater systems underscores the ecological importance of sabkha depressions, which may function as localised recharge zones or palaeoenvironmental archives.

Terrestrial Ecology

The Project lies within the Arabian Desert and East Sahero-Arabian Xeric Shrublands, a hyper-arid ecoregion characterised by extensive dune fields, interdunal gravel plains and sabkha systems. Within ~60 km² of the two plots, recent surveys and the Critical Habitat Assessment confirm a mosaic of EAD-classified habitats, notably sand sheets/dunes with shrub cover and with dwarf-shrub cover that qualify as Critical Habitat (CH), coastal sabkha designated as an Environmentally Sensitive Habitat (ESH), and localised escarpments/lithified dunes/burqas. No part of the Project footprint overlaps any protected area; the nearest are the Al Wathba Wetland Reserve (~6 km), Al Ghada Terrestrial Protected Area (~8.3 km) and Bul Syayeef Marine Protected Area (~12.8 km), underscoring the need for robust construction controls but not triggering PS6 Critical Habitat on adjacency alone.

Vegetation is sparse and patchy, dominated by *Tetraena qatarensis* on lower dune/flats and *Cyperus conglomeratus* on higher dunes, with associates such as *Haloxylon salicornicum*, *Calligonum comosum* and *Leptadenia pyrotechnica*. A small, isolated patch of *Haloxylon persicum* (Ghadha) occurs within Hybrid Project 1; by virtue of its extralimital, isolated nature and potential genetic distinctiveness relative to core populations in Al Ghada, this patch meets IFC PS6 Critical Habitat under Criteria 5.

At present, there is no need for the development of a Biodiversity Action Plan (BAP). However, if IFC PS6 Criterion 5 is confirmed through genetic testing, Masdar will prepare and maintain a Biodiversity Action Plan (BAP) prior to construction.

Faunal diversity is typical of the ecoregion, including reptiles (≥10 spp., including *Uromastyx aegyptia*—regionally/globally Vulnerable—with confirmed burrows in Hybrid Project 2), small mammals (e.g., Arabian jird), desert specialist birds in low numbers, and occasional use of the wider landscape by protected mammals (e.g., Arabian oryx) outside the Project sites.

Waste

The baseline condition of both sites shows limited evidence of waste accumulation due to their undeveloped status. Site reconnaissance recorded scattered domestic litter near access tracks, informal waste disposal along a site access route and one abandoned vehicle. No significant hazardous waste sources were observed. Regional waste management is overseen by Tadweer , which operates landfills, recycling centres and material recovery facilities across Abu Dhabi. Any waste generated by construction or operation activities will need to comply with Tadweer's regulatory framework, with collection undertaken by licensed Environmental Service Providers.

Traffic and Transport

Access to the Project sites is via unpaved desert tracks branching from secondary roads linked to the E11 and E22 highways. These highways form part of Abu Dhabi's strategic transport network, carrying high volumes of commuter and freight traffic. Local baseline traffic levels around the Hybrid Project 1 and Hybrid Project 2 sites are extremely low, limited to occasional agricultural vehicles and recreational off-road users. Public transport coverage is absent, and local communities rely on private vehicles. Current conditions, therefore provide high mobility but highlight the sensitivity of local access routes to increased Project-related vehicle movements.

Heritage and Archaeology

Al Dhafra hosts a deep archaeological and cultural record, from Neolithic through Islamic periods, embedded in desert corridors, dune margins and gravel ridges. Within the Project landscape, a single burqa (~4 ha) is present within the Hybrid Project 1 site. Field verification with EAD (21 Aug 2025) confirms its geomorphological integrity but minimal ecological value; its sensitivity is cultural/palaeontological. Fossil dune resources occur outside the footprint: a designated Fossil Dune Protected Area lies ~8–12 km to the northeast of Hybrid Project 2, and additional unprotected fossil dune formations occur ~5–10 km northwest/north. Desk review and EnviroPortal records indicate regional occurrences of lithic scatters, hearths and cairns on elevated gravel and dune margins; none are confirmed within the current Project footprint.

Social Environment

The Project sites are situated in the inland desert of Abu Dhabi's Al Dhafra Region, within a sparsely populated landscape that contrasts with the more urbanised Baniyas–Mafraq–Mussafah corridor to the northwest. While the immediate area contains no permanent settlements, it is influenced socio-economically by nearby residential, industrial and agricultural activity.

Population centres in proximity include Baniyas (~12–18 km), a suburban hub with housing, schools, clinics and commercial centres; and Al Mafraq (~17–24 km), characterised by worker accommodations, logistics facilities and the Mafraq Hospital. Further northwest, Mussafah (~30 km) forms one of Abu Dhabi's largest industrial zones, hosting heavy industry, logistics and extensive expatriate labour housing.

Baniyas hosts the nearest schools (government and private, following international curricula) while higher education is accessed in Abu Dhabi City. Health services are centred on Mafraq Hospital and Baniyas clinics, with limited emergency access to the Project sites via desert tracks, highlighting the need for on-site emergency preparedness during construction.

Site reconnaissance confirmed several social features within the Project area, including partially demolished and abandoned settlements and ranches. The ranches identified are used by Emirati families for social and cultural activities, and will be addressed through the DMT/Municipality relocation process, which moves land users to land areas allocated to these uses with enhanced infrastructure, hence improving security of tenure and conditions. Hence, the project is broadly aligned with the objectives of PS5.

Potential Environmental and Social Impacts

The initial and residual impacts across environmental, socio-economic and heritage aspects that were assessed during the Environmental and Social Impact Assessment (ESIA) are summarised in Table 0-1 below.

Table 0-1: Impacts Identified During the ESIA

Aspect	Impacts Identified	Project Phase	Initial Impact Rating	Residual Impact Rating
Geology and Soils	• Soil erosion or compaction resulting in poor re-establishment of the landform.	Construction	**Minor**	**Negligible**
	• Alteration of topography and natural drainage characteristics.		**Negligible**	**Negligible**
	• Disruption of natural groundwater flow.		**Negligible**	**Negligible**
Hydrogeology	• Disruption of natural groundwater flow.	Construction	**Negligible**	**Negligible**
Terrestrial Ecology	• Permanent loss of desert habitats incl. CH/ESH (dunes, sabkha margins, gravel plains).	Construction	**Major**	**Moderate**
	• Loss of protected/rare species and soil stabilising vegetation.		**Major**	**Moderate**
	• Burrow destruction, compaction, disturbance of fauna.		**Moderate-Major**	**Minor-Moderate**
	• Dust deposition reducing plant vigour; mortality of sensitive flora.		**Moderate**	**Minor**
	• Disturbance/displacement of nocturnal species.		**Moderate**	**Minor**
	• Habitat alteration and fragmentation; fauna restricted.	Operation	**Moderate**	**Minor-Moderate**
	• Disturbance and dust resuspension; compaction.		**Minor-Moderate**	**Minor**
	• Spread of alien plants altering ecosystems.		**Moderate-Major**	**Minor**
	• Long-term loss of ecosystem services; reduced connectivity; cumulative pressures.		**Major**	**Moderate**
Social	• Nuisance types include: – Dust, noise, odor, etc.; – Communicable disease; – Traffic congestion and degradation of local roads, such as transporting heavy equipment on E11, E22, and desert roads; – Visual disturbance; – Misconduct of security personnels or workers from the Project; and – Emergency events.	Construction	**Moderate**	**Minor**
	• A potential pressure on local economies and communities caused by a sudden increase in demand for goods, services, or labor due to the project, especially during construction or mobilization phases.		**Minor to Moderate**	**Minor**
	• Short-term pressure on local infrastructure services and markets, including: – Local transportation and road services; – Retail service; – Healthcare service; – Water use service; and – Waste treatment and disposal service.		**Moderate**	**Minor**
	• Working conditions of the labor force, such as risks to heat stress, accommodation, sanitation, communicable diseases; and • Occupational health and Safety.	Construction and Operation	**Major**	**Moderate**
	• Visual disturbance; • Misconduct of security personnels or workers; and • Emergency events.	Operation	**Minor**	**Negligible**
	• Alteration of Visual and Landscape Character – The transformation of the deserts natural appearance may lead to a reduction in its perceived aesthetic and recreational value. • Socio-Economic Implications		**Minor**	**Minor**

Aspect	Impacts Identified	Project Phase	Initial Impact Rating	Residual Impact Rating
	– A decline in the quality of the desert landscape could adversely affect socio-economic activities, particularly those dependent on tourism, cultural heritage, or environmental appreciation.			
	• Healthcare service; and • Water use service.		**Minor**	**Negligible**
Landscape and Visual	• Temporary alteration of visual landscape.	Construction	**Negligible**	**Negligible**
	• Artificial lighting.		**Negligible**	**Negligible**
	• Permanent alteration of visual landscape.	Operation	**Negligible**	**Negligible**
	• Disruption of natural desert dark skies.		**Negligible**	**Negligible**
Waste Management	• Site preparation and installation of infrastructure.	Construction	**Negligible**	**Negligible**
	• Generation of hazardous and non-hazardous waste.	Operation	**Negligible**	**Negligible**
Heritage and Archaeology	• Disturbance of documented and undocumented archaeological resources.	Construction	**Minor**	**Negligible**
	• Permanent landscape modification.	Operation	**Moderate**	**Minor**
	• Restricted access and intangible heritage.		**Minor**	**Negligible**
	• Low ongoing risk of archaeological disturbance.		**Negligible**	**Negligible**

Mitigation

Several key mitigation measures are prescribed in this study that allows the residual risks to be minimised to a large extent. Additional mitigation measures are detailed in the Mitigation Management Matrix (MMM) in the Construction Environmental and Social Management Plan (CESMP). It also includes mandatory environmental monitoring activities to ensure that Project activities adhere to Good International Industry Practice (GIIP).

Monitoring throughout the Project lifecycle is required to determine the effectiveness of these measures to achieve the necessary Project targets.

Stakeholder Engagement

Key stakeholders include:

- Local communities (Baniyas, Mafraq);
- Tangible assets (ranches, azbahs);
- Infrastructure service providers (transport, water, health);
- Regulators (EAD, Department of Municipalities and Transport (DMT), Department of Energy (DoE), Department of Culture and Tourism (DCT)); and
- Project workforce representatives.

Engagement will follow IFC and EAD requirements, ensuring early-informed consultation, disclosure and grievance mechanisms. A Stakeholder Engagement Plan (SEP) has been developed for the Project.

Conclusion

The Masdar Hybrid Project is a strategically significant renewable energy development that will:

- Provide ~5 GWp of solar power with 20 GWh storage capacity;
- Support UAE's Net Zero 2050 targets and energy security;
- Create local economic and employment opportunities; and
- Require careful management of environmental, social, and cultural heritage sensitivities.

The ESIA has identified a total of 37 impacts (refer to Table 0-2). Of these, 7 were considered moderate or major residual impacts and are therefore considered to be significant for the purposes of the assessment. The remaining 30 adverse effects were assessed to be negligible or minor and are therefore not significant for the purposes of the assessment.

Table 0-2: Impact Assessment Summary

Aspect	Potential Impacts Ratings					Residual Impacts Ratings			
Geology and Soils	2	1			3	3			3
Hydrogeology	2				2	2			2
Terrestrial Ecology	1		4	5	10	1	4	5	10
Social	1	3	3	2	9	4	3	2	9
Landscape and Visual Amenity	5				5	5			5
Waste Management	3				3	3			3
Heritage and Archaeology	1	2	1		4	3	1		4

These residual adverse effects will be carefully controlled and monitored through a series of management and control plans. The application of mitigation measures as well as management and control plans will moreover allow for the realisation of benefits/enhancements as a result of the proposed Project.

To conclude, the impact assessment process indicates that the Project will generally have no significant major adverse impacts.