International ESIA for an Integrated Renewable Energy Project

180MW Wind Power and Battery Energy Storage System, Tsogttsetsii soum, Mongolia

Chapter 0 Executive Summary

Chapter 1 Introduction

PREPARED FOR

Net Zero Energy LLC
MCS and URECA

DATE
2 November 2026

REFERENCE
0747189



DOCUMENT DETAILS

The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.	
DOCUMENT TITLE	International ESIA for an Integrated Renewable Energy Project
DOCUMENT SUBTITLE	180MW Wind Power and Battery Energy Storage System, Tsogttsetsii soum, Mongolia
PROJECT NUMBER	0747189
DATE	2 November 2026
VERSION	05
AUTHOR	ERM-Hong Kong, Limited
CLIENT NAME	Net Zero Energy LLC (MCS and URECA)

DOCUMENT HISTORY

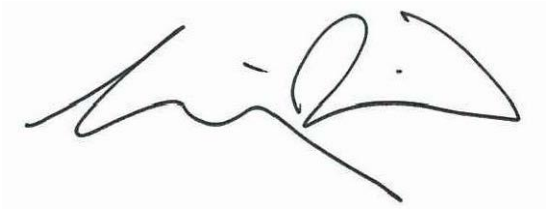
				ERM APPROVAL TO ISSUE		
VERSION	REVISION	AUTHOR	REVIEWED BY	NAME	DATE	COMMENTS
Version	00	Var.	Tom Glenwright	Craig Reid	28 November 2025	Draft
Version	01	Var.	Tom Glenwright	Craig Reid	19 December 2025	Addressed NZE comments
Version	02	Var.	Tom Glenwright	Craig Reid	08 May 2026	Addressed IFC comments
Version	03	Var.	Tom Glenwright	Craig Reid	15 May 2026	Final. Addressed NZE comments
Version	04	Var.	Tom Glenwright	Craig Reid	16 October 2026	Final. Addressed IFIs' comments
Version	05	Var.	Tom Glenwright	Craig Reid	2 November 2026	Final. Addressed IFIs' comments

SIGNATURE PAGE

International ESIA for an Integrated Renewable Energy Project

180MW Wind Power and Battery Energy Storage System, Tsogttsetsii soum, Mongolia

Executive Summary and Chapter 1 Introduction
0747189



Craig A. Reid
Partner

ERM-Hong Kong, Limited

2507 One Harbourfront

18 Tak Fung Street

Hong Kong

Tel: +852 2271 3000

Fax: +852 3015 8052

© Copyright 2026 by The ERM International Group Limited and/or its affiliates ('ERM'). All Rights Reserved.
No part of this work may be reproduced or transmitted in any form or by any means, without prior written permission of ERM.

CONTENTS

0. EXECUTIVE SUMMARY 0-1

0.1 INTRODUCTION 0-1
0.2 PROJECT DESCRIPTION 0-2
0.2.1 Project Location and components 0-2
0.2.2 Project Activities 0-4
0.2.3 Unplanned Events 0-5
0.2.4 Project Management 0-5
0.3 POLICY & LEGAL FRAMEWORK 0-5
0.4 ESIA APPROACH & METHODOLOGY 0-6
0.5 ENVIRONMENTAL & SOCIAL BASELINE 0-7
0.5.1 Environmental and biodiveristy Baseline 0-7
0.5.2 Social Baseline 0-9
0.6 SUMMARY OF ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA) AND UNPLANNED EVENTS 0-11
0.7 SUMMARY OF CUMULATIVE IMPACT ASSESSMENT (CIA) 0-12
0.8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) 0-13

1. INTRODUCTION 1-1

1.1 PURPOSE OF THIS REPORT 1-1
1.2 PROJECT BACKGROUND 1-1
1.2.1 Project Proponent Information 1-2
1.2.2 Project Components 1-2
1.3 ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT OBJECTIVE 1-5
1.4 STRUCTURE OF THE ESIA 1-5
1.5 LIMITATIONS 1-6
1.5.1 Scope of Activities 1-6
1.5.2 Limitations of Use of this Report 1-6

LIST OF TABLES

TABLE 0-1: SUMMARY OF ENVIRONMENTAL AND BIODIVERSITY BASELINE 0-7
TABLE 0-2: SUMMARY OF ENVIRONMENTAL AND SOCIAL IMPACTS AND UNPLANNED EVENTS 0-11
TABLE 1-1: PROJECT PROPONENT SUMMARY 1-2
TABLE 1-2: STRUCTURE OF THE ESIA 1-5

LIST OF FIGURES

FIGURE 0-1: PROJECT LOCATION 0-3
FIGURE 0-2: ESIA PROCESS 0-7
FIGURE 1-1: KEY PROJECT COMPONENTS 1-3
FIGURE 1-2: KEY PROJECT COMPONENTS (ZOOM-IN) 1-4

ACRONYMS AND ABBREVIATIONS

Acronyms	Description
AADT	Annual Average Daily Traffic
[redacted]	[redacted]
AIS	Air Insulated Switchgear
ALARP	As Low As Reasonably Practicable
AoI	Area of Influence
APLIC	Avian Powerline Interaction Committee
BESS	Battery Energy Storage System
BMP	Biodiversity Management Plan
BOD	biochemical oxygen demand
CAF	Central Asian Flyway
CAQMP	Construction Air Quality Management Plan
CCRA	Climate Change Risk Assessment
CD	Community Development
CH	Critical Habitat
CHA	Critical Habitat Assessment
CIA	Cumulative Impact Assessment
CIP	Climate Impact Platform
CITES	Convention on International Trade in Endangered Species
CLO	Community Liaison Officer
CMIP6	Coupled Model Intercomparison Project Phase 6
CMS	Conservation of Migratory Species of Wild Animals
CO	Carbon monoxide
COD	chemical oxygen demand
CR	critically endangered
CRM	Citizen's Representative Meeting
CRM	Collision Risk Model
CSMP	Cold Stress Management Plan
DEIA	Detailed Environmental Impact Assessment
DFID	International Development
DSF	Development Support Fund
E&S	Environmental and Social
EAAA	Ecologically Appropriate Area of Analysis

Acronyms	Description
EAAF	East Asian-Australasian Flyway
EBRD	European Bank for Reconstruction and Development
EC	Electrical Conductivity
EEO	Extent of Occurrence
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EN	Endangered
EPC	Engineering Procurement and Construction
EPRP	Emergency Preparedness and Response Plan
ERM	ERM-Hong Kong, Limited
ESA	European Space Agency
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environment and Social Management System
ETI	Ethical Trading Initiative
FERP	Flood Emergency Response Plan
FFDI	Arthur Forest Fire Danger Index
FGD	focus group discussion
FPIC	Free, Prior and Informed Consent
GBV	Gender-based violence
GCD	Global Climate Database
GHG	Green House Gas
GIIP	good international industry practice
GIS	Geographic Information System
GM	grievance mechanism
GPN	This Good Practice Note
GRM	Grievance Redress Mechanism
HCO	Bicarbonate
HSEQ	Health, Safety, Environment, and Quality
HSMP	Heat Stress Management Plan
HSS	Health, Safety and Security
HSSE	Health, Safety, Security and Environment
HVAC	Heating, Ventilation, and Air Conditioning

Acronyms	Description
IA	Impact Assessment
IAQM	Institute of Air Quality Management
IBA	Important Bird and Biodiversity Areas
IBAT	Integrated Biodiversity Assessment Tool
IFC	International Finance Corporation
ILO	International Labour Organisation
IMAR	Inner Mongolia Autonomous Region
IPA	Important Plant Areas
ISMP	Invasive Species Management Plan
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Areas
KII	Key Informant Interview
LC	Least Concern
LiDAR	Light Detection and Ranging
LLC	Limited Liability Company
LO	Land Officer
LRP	Livelihood Restoration Plan
LRP	Livelihood Restoration Plan
LVIA	Landscape & Visual Impact Assessment
MCS	Mongolian Consulting Service
MECC	Ministry of Environment and Climate Change
MNS	Mongolian National Standard
MRIA	Mongolian Renewables Industries Association
MRL	Mongolian Red List
MSDS	Material Safety Data Sheet
MW	Mega Watt
MWEA	Mongolian Wind Energy Association
NASA	National Aeronautic Space Administration
NDC	Nationally Determined Contributions
NDC	National Dispatching Centre
NE	not evaluated
NGO	Non-governmental Organization
NH4+	Ammonium

Acronyms	Description
NO2	Nitrogen dioxide
NO2-	Nitrite
NO3-	Nitrate
NOAA	Atmospheric Association
NPTG	National Power Transmission Grid Company
NPTG	National Power Transmission Grid Company
NREC	The National Renewable Energy Centre
NSR	Noise sensitive receiver
NT	Near threatened
NZE	Net Zero Energy LLC
O&M	Operation and Maintenance
OHL	Overhead Transmission Line
OHS	Occupational Health and Safety
OT	Oyu Tolgoi
PA	protected area
PAD	project affected districts
PAPs	Project Affected Persons
PI, mg/L	Phosphate
PM	Particulate matter
POP	persistent organic pollutants
PPA	Power Purchase Agreement
PPE	Personal protective equipment
PS	Performance Standards
RAP	Resettlement Action Plan
RCIA	Rapid Cumulative Impact Assessment
RCS	Real Case Scenario
RILI	rainfall-induced landslide index
RoW	Right of Way
SCADA	Supervisory Control and Data Acquisition
SNH	Scottish Natural Heritage
SO	Social Officer
SO2	Sulphur dioxide
SO4	Sulphate

Acronyms	Description
SPA	Strictly Protected Area
SRTM	Shuttle Radar Topography Mission
STE	Serrated Trailed Edge
TDS	Total Dissolved Solids
TIP	Trafficking in Persons
TL	Transmission Line
TNC	The Nature Conservancy
TOR	Terms of Reference
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States dollars
UV	Ultra-violet
VEC	Valued Environmental and Social Components
VP	Vantage Point
VU	Vulnerable
WBG	World Bank Group
WBGT	Wet Bulb Globe Temperature
WCS	Worst Case Scenario
WCS	Wildlife Conservation Society
WHO	World Health Organisation
WPF	Wind Power Farm
WPFW	West Pacific Flyway
WRI	World Resource Institute
WSDI	Warm spell duration index
WTG	Wind Turbine Generator
WWF	World Wide Fund for Nature

0. EXECUTIVE SUMMARY

0.1 INTRODUCTION

Net Zero Energy LLC is a joint venture between MCS Mongolia and URECA Mongolia. Established in 1993, MCS is one of the largest business conglomerates in Mongolia. MCS has created a special purpose vehicle (SPV), Net Zero Energy LLC, as the Project implementing entity. URECA is a climate technology provider company and provides Decarbonization as a Service (DaaS) for corporates including digital MRV (monitoring, verification and verification) technologies to measure and implement high quality carbon projects with a focus on Asia. NZE is developing the Bilgeh Wind Farm and taking advantage of Mongolia's abundant renewable energy resources to contribute to the national energy policy targets. The Bilgeh Wind Farm (up to 180 MW) will be the largest in the country and will be fully consistent with Mongolia's long-term development policy "Vision 2050" and the "New Revival Policy" specifically the "Energy Revival" sub-policy.

ERM-Hong Kong Ltd. (ERM) has been commissioned by NZE to carry out an Environmental and Social Impact Assessment (ESIA) in compliance with national and international standards such as International Finance Corporation (IFC) Performance Standards (PS) the associated World Bank Group (WBG) Environmental, Health and Safety (EHS) Guidelines.

The purpose of the ESIA is to discuss and present the findings of the ESIA of the 180 MW onshore wind farm (the "Project" or "Bilgeh Wind Project"), located in Umnugovi (also written Ömnögovi, and Mongolian: Өмнөговь) Province in southern Mongolia where applicable, mitigation, or enhancement measures have been designed to avoid, minimize/reduce, and compensate/offset negative impacts to the environment and/or people.

The ESIA report is structured as followed:

- Chapter 1: Executive Summary and Introduction
- Chapter 2: Policy, Legal & Administrative Framework
- Chapter 3: Project Description
- Chapter 4: Impact Assessment Methodology
- Chapter 5: ESIA Screening and Scoping
- Chapter 6: Environmental and Social Baseline
- Chapter 7: Environmental Impact Assessment
- Chapter 8: Social Impact Assessment
- Chapter 9: Unplanned Events Impact Assessment
- Chapter 10: Cumulative Impact Assessment
- Chapter 11: Environmental and Social Management and Monitoring Plan
- Chapter 12: Stakeholder Engagement
- Annexes A to J

0.2 PROJECT DESCRIPTION

0.2.1 PROJECT LOCATION AND COMPONENTS

The WTG Area and OHL of the Project is located in Umnugovi (also written Ömnögovi, and Mongolian: Өмнөговь) Province in southern Mongolia, relatively close (about 130 km) to the border with China. It is in the district (Mongolian: soum) of Tsogttsetsii (Mongolian: Цогтцэций) and is close (~60 km) to the Oyu Tolgoi Mine to which the transmission line will connect (***Figure 0-1***).

The Project components that will be assessed during the ESIA process are as follow:

- 29 Wind Turbine Generators (WTG);
- Substation consisting of 2x120 MVA power transformers located near the WTG area and the substation will be equipped with a Control Room;
- A Battery Energy Storage System of 50 MWh (BESS);
- A ~65 km double-circuit 220 kV Overhead Transmission Line (OHL) connecting in a southeast direction from the Wind Farm Site to the Oyu Tolgoi Mine's central substation (Option 1) or Zes Oyu 220 kV switching station (Option 2);
- An ~30.9 km improved/unpaved road connecting the existing heavy duty coal transport Road to the WTG Area;
- About ~56 km of internal roads within the WTG Area connecting the different facilities;
- An OHL Access Road of total length about 62.2 km which will support construction and operation of OHL;
- Temporary facilities including workers' accomodation camp, offices, laydown (storage and stockpile) areas, concrete batching plant and onsite solar power generation area (Photo Voltaic array and BESS) and turbine installation areas for WTG assembly.

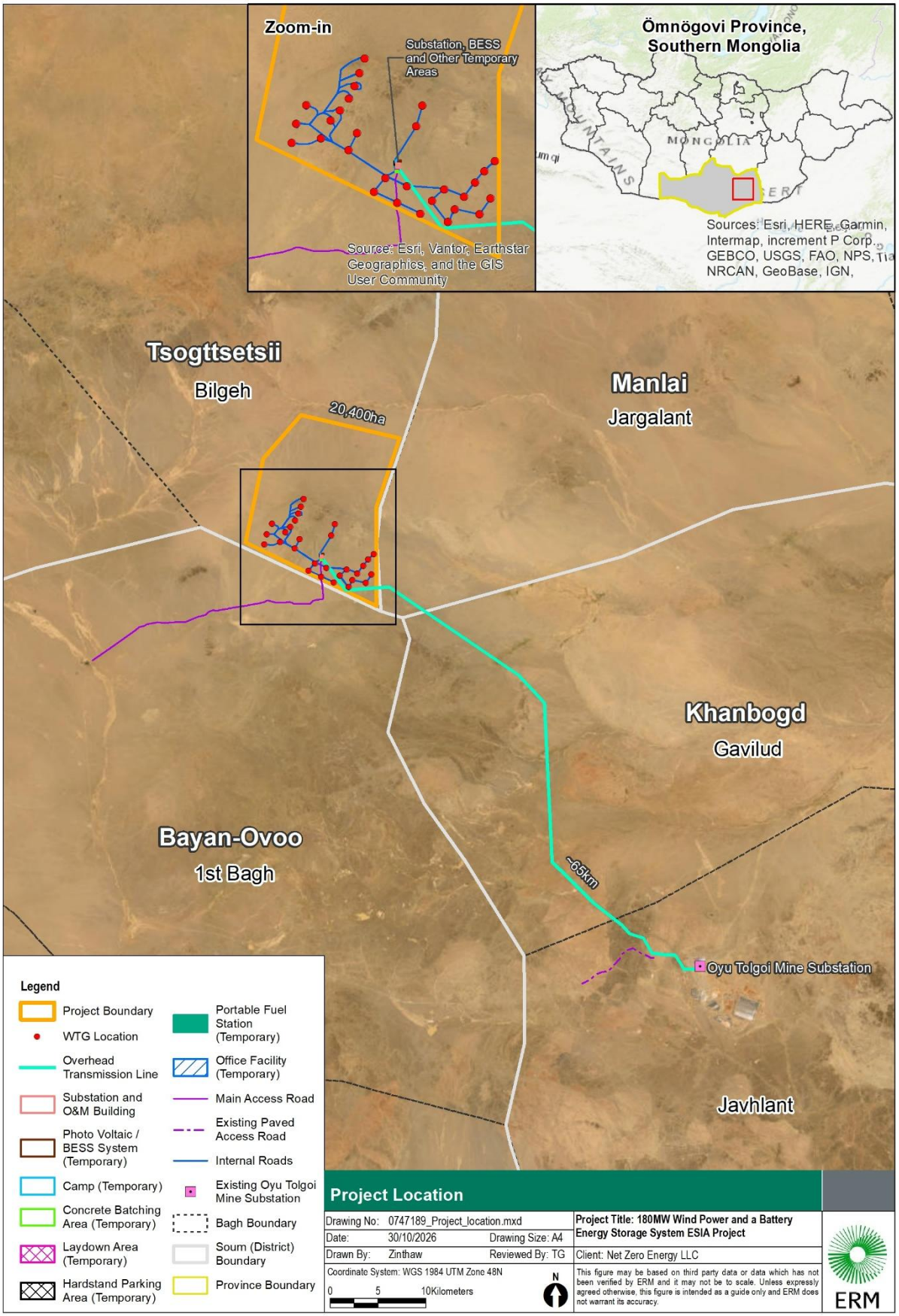


FIGURE 0-1: PROJECT LOCATION

0.2.2 PROJECT ACTIVITIES

0.2.2.1 DEVELOPMENT ACTIVITIES

The development phase of the Project will involve the following activities:

- Land possession: by coordinating with the local Governor, to secure all land necessary for the Project;
- Design: preparation of the detailed design and layout of wind turbines within the Project Site and other infrastructure (substation, transmission lines, Control Building, auxiliary works, etc.); and
- Permitting process: obtainment of all necessary permits and authorizations prior to construction.

0.2.2.2 CONSTRUCTION ACTIVITIES

The main construction phase will take up to 17 months, and will involve the following activities:

- Workforce mobilization and presence: this will include Engineering Procurement and Construction (EPC) contractor mobilization, construction of the worker's accommodation and office facilities, and storage areas.
- Land preparation (site clearance, excavation, and ground levelling), fencing, and civil works;
- Establishment of ancillary facilities such as concrete batching plant, stockpile (laydown) area and crane installation area, storage area, quarry sites and spoil disposal sites;
- Construction of Access Road;
- Construction of internal roads;
- Construction of WTGs foundations, BESS and Substation;
- Construction of the OHL;
- Transportation of WTGs, construction material and machines;
- Installation of BESS and Substation;
- Installation of WTGs and internal cabling;
- Installation of the communication and control system;
- Construction and installation of power supply systems and fences; and
- Completion of internal electrical connections.

0.2.2.3 OPERATION AND MAINTAINANCE ACTIVITIES

The Operation and Maintenance (O&M) of the WTGs is estimated at 20-25 years.

Activities that will be carried out during the operation phase include:

- Scheduled annual maintenance activities at each WTG location as per the supplier's specifications;
- Routine inspection of all WTGs as per supplier's specifications;
- Operation and maintenance of ancillary facilities such as Substation, BESS, storage areas, and other existing facilities;
- Inspection and maintenance of OHL; and

- Inspection and maintenance of internal roads and Access Road.

The WTGs will operate at all times, provided that wind speeds are suitable, with the exception of downtime required for maintenance activities. For the most part, day-to-day facility operations will be automated through the use of computerized networking systems.

0.2.3 UNPLANNED EVENTS

There is the potential for unplanned events to occur during the construction, operation, or decommissioning phases of the Project. Examples of unplanned events include:

- Leakage and spill incident;
- Equipment failure;
- Fire and explosion;
- Blade throw / ice throw;
- Transmission line snapping and transmission pylon collapse; and
- Vehicle collision.

0.2.4 PROJECT MANAGEMENT

Some key parties involved in the project management, include the following:

- Project Proponent: NZE
- Equipment Supplier: [redacted]
- Construction contractor: [redacted]
- O&M contractor: [redacted] / [redacted]

0.3 POLICY & LEGAL FRAMEWORK

The regulatory framework that applies to the Project comprises national legislation, company-specific policies, and guidelines, as well as international standards and guidelines, given the involvement of international lenders. The key policy and legal frameworks are listed below:

- National Administrative Requirements:
  - Constitution of Mongolia (1992), the Concept of Sustainable Development of Mongolia 2030, the State Policy on Energy (2015), the State Policy on Energy (2001), New Revival Policy (2021) and Law on Energy (2001); and
  - Environmental legislation: Law on Environmental Protection (1995), Law on Water (2012), Law on Land (2002), Law on Land Fee (1997), Law on Soil Protection and Prevention from Desertification (2012), Law on Natural Plant (1995), Law on Fauna (2012), Law on Air (2012), Law on Pollution Fee (2010), Law on Waste (2017), Law on Environmental Impact Assessment (2012), Law on Cultural Heritage Protection (2014), Law on Natural Resource Use Fee (2012), Law on Subsoil (1988), Law on Special Protected Areas (1994), Law on Buffer Zones of Protected Areas (1995).
- International Standards and Guidelines, including:
  - International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability (2012);
  - World Bank Group Environmental Health and Safety Guidelines (2007);
  - IFC and EBRD's Guidance Note on Workers' Accommodation: Processes and Standards;

- IFC Addressing Grievances from Project Affected Communities (2009);
- IFC Handbook for Preparing a Resettlement Action Plan, 2002 and Good Practice Handbook, Land Acquisition, and Involuntary Resettlement (2023);
- IFC Addressing Gender-Based Violence and Harassment: Emerging Good Practice for the Private Sector (2020); and
- UN Voluntary Principles on Security and Human Rights.
- EBRD Environmental and Social Policy (2024)
- ADB Environmental and Social Framework (2024)

- International Agreement and Conventions;
- Mongolian Environmental Standards;
- Good Industry Practices; and
- Mongolia's Emissions Guidelines for air, noise and water.

0.4 ESIA APPROACH & METHODOLOGY

The ESIA is undertaken following a systematic process that predicts and evaluates the impacts the Project could have on aspects of the physical, biological, social/socio-economic and cultural environment and identifies measures that the Project will take to avoid, reduce, mitigate, offset or compensate for adverse impacts; as well as to enhance positive impacts where practicable. The methodology follows the approach illustrated in ***Figure 0-2***.

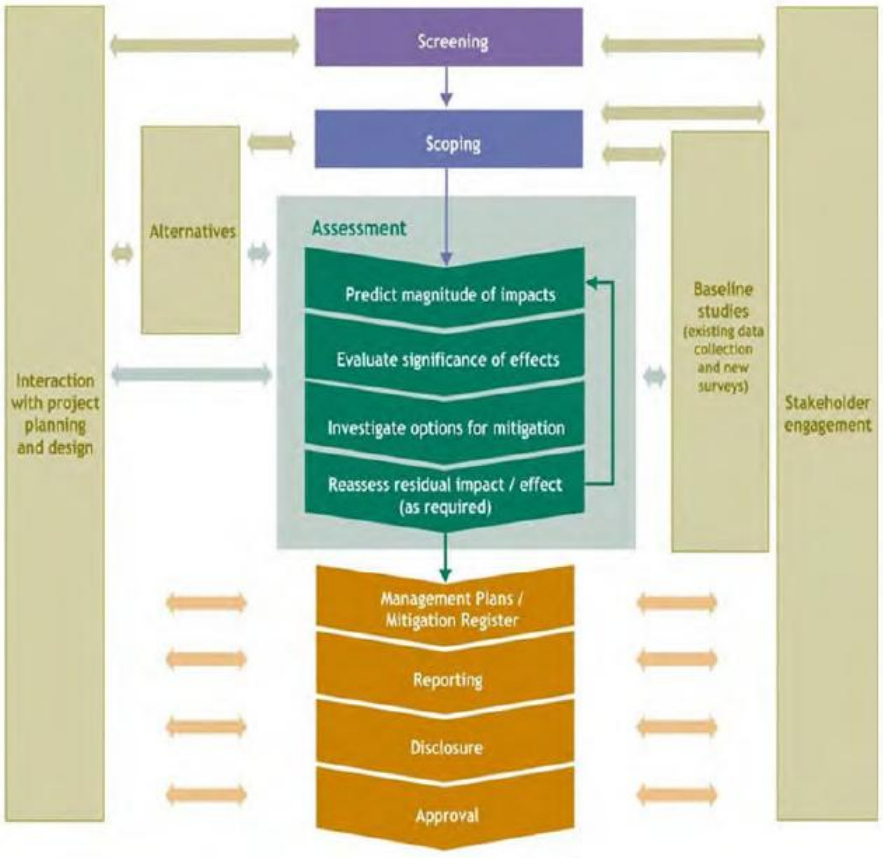


FIGURE 0-2: ESIA PROCESS

The criteria for assessing the significance of impacts have been drawn, where available, from the applicable legislation and standards. It considers issues specifically associated with construction and operation of the Project and to present impact identification and evaluation mechanism which is specific to the development type, thereby allowing for much more focused and refined assessment.

0.5 ENVIRONMENTAL & SOCIAL BASELINE

The existing environmental and social conditions are set within the Project Area of Influences, which can be referred to ***Section 5.3.1***. **Chapter 6: Environmental and Social Baseline** includes studies of the area's topography, geology and soil quality and conditions, climate and meteorology conditions, natural hazards, hydrology and water quality, air quality, noise levels, landscape and visual characteristics, terrestrial biodiversity and social.

0.5.1 ENVIRONMENTAL AND BIODIVERISTY BASELINE

TABLE 0-1: SUMMARY OF ENVIRONMENTAL AND BIODIVERSITY BASELINE

Receptor	Description
Topography	The land lease area within which the Project will be located and its surrounding areas contain areas of hill ranges in the central areas with expanses of gently undulating and relatively flat land and have an altitude of 1,190 m to 1,590 m above sea level.
Geology and Soil	The soils in the region are characterised as semi-desert or arid desert which are rarely deep and the bedrock is composed of cretaceous conglomerate, sandstone, and siltstone, as well as Neogene clay. Three subtypes of semi-desert light brown soils are distributed throughout the NZE Wind Farm project area and along the OHL route. These soils are characteristic of arid and semi-arid regions and reflect the natural conditions of the Mongolian Gobi. Based on laboratory analysis, the soils in the project area are generally low level of soil fertility. The dominant soil texture is sandy loam, with a weakly aggregated and fragile particle structure. Laboratory analysis of heavy metals revealed that only arsenic (As) concentrations in soil samples from 2 out of 6 samples slightly exceeding the precautionary threshold.
Climate and Meteorology	The weather and climate of the Project is characteristic of Mongolia's dry, continental interior climate and extreme temperatures during the short hot summers and long cold winters. Rainfall is limited, with a significant excess of evaporation over rainfall, meaning that the region tends to be extremely dry with very little permanent surface water.
Natural Hazards	Dust storms are most frequent during spring, between March and May. Dust storms during spring time are sometimes severe enough to warrant the temporary shutdown of operations and prevention of air travel. Periods of low rainfall are common in Mongolia, and the Gobi region is known to have high inter-annual variability of precipitation and episodic droughts. The Gobi and southern aimags are vulnerable to Dzud due to combined summer drought and harsh winter conditions. Project region has previously experienced such events, but are only limited to the summer months, i.e., mainly July and August. The eastern part of the Omnogovi region where the Project is situated has low to medium earthquake risks (Degrees I to V and VI).

Receptor	Description
Hydrology	Project is located in the Central Asian Internal Drainage Basin. The river basins in the region have temporary or ephemeral runoff and are dry most of the year.
Groundwater Availbility	Water supply in the South Gobi Region is almost exclusively from groundwater, with livestock and municipal use supplied by shallow and deep wells recharged by rain and snow. Groundwater deposits in Omnogobi Province are closely related to geological formations and depressive relief, with irrigated aquifers providing significant water accumulation and feeding other aquifers.
Surface Water Quality	During the field survey, nine dry riverbeds were identified—two within the wind farm area and seven along the OTL route. Riverbeds widths range from 9 to 160 meters, with sandy sediments mixed with gravel and rocks. A water sample from Khaya Spring along the OHL route in Gaviluud bagh, Khanbogd soum, was analysed in accredited labs. The water is chloride-sulfate type, sodium group, Type I—slightly saline, moderately soft, magnesium-dominated hardness, and turbid. Sodium concentration was 520 mg/L, exceeding the MNS 0900:2018 limit of 200 mg/L by 320 mg/L. Other heavy metals were within permissible limits. Khaya Spring flows southwest to northeast toward Munkh Ovoo, gradually seeping into the ground.
Groundwater Quality	During the field survey, a total of seven (7) wells were documented, with six (6) wells located in vicinity of wind farm area and one (1) well along the OHL. Water samples were taken from four wells. The hydrochemical analysis results from well located within the NZE Wind Farm site and along the OHL route varied. Nitrate concentrations in the Gün Shand and Mukhar Ereg wells exceed the permissible limits set for drinking water, representing a potential risk to human health. Arsenic levels in the Gün Shand well was found to be above established regulatory thresholds.
Air Quality	Air quality monitoring was carried out at six key locations across the NZE Wind Farm site, the overhead transmission line route, and the planned access road. The results showed that levels of particular matters, sulfur dioxide and nitrogen dioxide were significantly below the limits set by Mongolia’s National Air Quality Standard
Noise Level and Vibration	Noise level measurements were carried out at six same locations to air quality monitoring. The average daytime noise levels at the field measurement locations NO1–NO6 ranged between 33.2 and 57.3 dBA, while the nighttime levels ranged between 31.5 and 46.7 dBA.
Landscape Visual Characteristic	NZE Wind Farm site is characterized by high plateau with hill ranges terrain with elevations ranging from 1,500 to 1,550 meters above sea level, interspersed with valleys situated at approximately 1,380 to 1,520 meters elevation. The highest point within the site is Mount Zogdor, located near the centre, with an elevation of 1,581.3 meters above sea level. The terrain along the OHL route generally slopes downward from northwest to southeast, with elevations ranging from approximately 1,440 to 1,200 meters above sea level. The OTL will traverse a landscape of valleys and rocky outcrops, passing through low hills.
Biodiversity	Baseline studies through primary surveys and secondary desktop research have identified multiple species of conservation significance that potentially occur within the Project AoI, which is defined as a five (5) km radius from each WTG and a two (2) km buffer from the central line of the OHL and Access Road. The Project AoI, including the WTG area and most of the OHL, is largely situated within the Eastern Gobi Desert Steppe Ecoregion, while the southern section of the transmission line where it connects to the Oyu Tolgoi substation lies within the Alashan Plateau Semi-Desert Ecoregion. The Project site also overlaps with locally protected areas, as well as located

Receptor	Description
	26.4 km from the Galba Gobi Key Biodiversity Area and Important Bird and Biodiversity Area, and 36.3 km from the Small Gobi A Strictly Protected Area (from the closest point). The WTG area legally protected and internationally recognized areas of biodiversity importance. The habitat assessment done for this Project has identified the Project AoI as comprising of predominantly natural habitat (<99% of the total AoI), characterized by sparsely vegetated areas of open desert steppe, mountains and hills, and dry riverbeds, with drought-adapted shrubs and low glasses thinly distributed throughout. The extent of modified habitats in the AoI is very limited, primarily consisting of the Oyu Tolgoi mine, existing roads, a coal processing facility adjacent to the proposed main access road, and small temporary settlements of nomadic herders. • 109 plant species were recorded during the baseline flora surveys • A total of 16,977 birds belonging to 63 species have been identified during avifauna surveys • 17 species of non-volant mammals and two (2) bat species were recorded during the mammal surveys. The Critical Habitat Assessment shows that there are no Critical Habitat-qualifying biodiversity values for the Project.

0.5.2 SOCIAL BASELINE

The economic and social analyses demonstrate the Project's intention to manage and mitigate its impacts on the local community's living conditions and livelihoods.
The objectives of the socio-economic survey are to:

- Gather data about socio-economic conditions in the Project Site to help identify potential impacts; and
- Identify and understand the perceptions and concerns of the stakeholders including local authorities and local communities, who might be potentially affected by the Project's construction and operation activities.

The socio-economic data collection approach combined both secondary and primary sources. is Secondary data was compiled through the review of public information, documents provided by the Client, as well as a review of available literature from ERM's in-house library. Primary data collection involved direct engagement with local authorities and communities through focus group discussions (FGDs), key informant interviews (KIIs), household surveys, and on-site observations.

Tsogttsetsii soum is the most populous, with 10,194 residents, followed by Khanbogd soum with 8,941. Manlai soum has the smallest population at 2,575. Overall, population density across the region remains very low, ranging from approximately 0.2 to 1.4 persons per square kilometre. The age structure across the Project area is predominantly composed of working-age individuals, and the gender ratio remains generally balanced.

Land use in these soums is dominated by rangelands, which account for more than 70% of the territory. Livestock herding remains the primary livelihood, and agricultural activity is minimal. Other means of livelihood include mining and related services.

Settlement patterns reflect the nomadic heritage of the region. Most households are concentrated in soum centres, but numerous winter camps and livestock shelters are scattered across the steppe.

Infrastructure is limited in the area. Water is sourced primarily from shallow wells, electricity is supplied through a mix of grid connections and solar panels, and roads are mostly gravel tracks. Each soum has basic health and education facilities, though services are concentrated in soum centres, requiring rural residents to travel long distances for schooling and medical care. Teacher shortages and limited healthcare personnel remain challenges.

Culturally, the population is predominantly Khalh Mongol, with small Kazakh and Buryat minorities. The area is rich in cultural heritage, including sacred mountains, ovoos, and historical sites. However, no cultural heritage were identified in the Project area, with the exception of ovoos at one location. Although a tomb was identified, it was looted and disturbed and assessed as not holding cultural, spiritual, or historical significance.

0.5.2.1 STAKEHOLDER ENGAGEMENT

ERM conducted stakeholder engagements in September 2024 and February 2025. The visits included a project overview presentation, followed by a Q&A session with local authorities and community members to gather initial feedback. In parallel, baseline data collection activities were conducted through Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) with soum and bagh government officers; as well as FGDs with herder representatives and women's groups.

ESIA stakeholder engagement was conducted in June 2025. The purpose of the ESIA stakeholder engagement was to present updated Project information, the process of ESIA study, ESIA Stakeholder Engagement Plan, Project's potential impact and proposed mitigation measures, grievance contact, and the next steps.

For household interviews, the survey used the household questionnaire method, whereby a set of data was collected at the household level using structured questionnaires. The questionnaire for the household interview was designed to capture the following data and information:

- Family status and demographics;
- Education background (i.e., education level of members in the surveyed households);
- Occupation, livelihood, and status;
- Health profile of household members being interviewed;
- Economic conditions (i.e., condition of household assets and utilities, socio-economic level, income and access to loans);
- Current condition of local public services and infrastructure including road, telecommunications, electricity and water supply, as well as the household's access to such services;
- Natural resources;
- Cultural heritage; and
- Awareness and concerns about the Project's activities as well as their potential positive and negative impacts.

0.6 SUMMARY OF ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA) AND UNPLANNED EVENTS

The Impact Assessment process has considered:

- Potential Impacts: impacts likely generated by the Project's activities;
- Existing Controls: mitigation measures established within the regulatory Detailed Environmental Impact Assessment (DEIA) to be approved by the government;
- Significance of Impacts: evaluated based on the condition that the DEIA mitigation measures (also referred to as existing controls) are implemented and potential impacts are managed by committed mitigation measures under the DEIA;
- Additional Mitigation Management and Monitoring Procedures: in addition to those prescribed by the DEIA, to further reduce the significance of the impacts and also comply with international standards;
- Monitoring and Audit: activities to monitor and audit the implementation and efficacy of mitigation; and
- Residual Impacts: evaluation of the significance of the impacts based on the assumptions that all mitigation and enhancement measures (DEIA and ESIA) are implemented and monitored.

Table 0-2 below presents the outcomes of the comprehensive assessment of identified impacts as a result of the various phases of the proposed Project and summarise the respective impacts.

TABLE 0-2: SUMMARY OF ENVIRONMENTAL AND SOCIAL IMPACTS AND UNPLANNED EVENTS

Impact Description	Phase*	Impact nature	Significance of Impact	Residual Impact
Environmental				
Impact on Air Quality	C	Negative	Negligible to Moderate	Negligible to Minor
Impact on Climate Change	(Refer to specific climate hazards in Section 7.2)			
Impact on Noise	C	Negative	Negligible to Minor	Negligible
Impact on Noise	O	Negative	Minor	Negligible
Impact on Soil	C	Negative	Minor	Minor
Impact on Water Resources	C	Negative	Negligible	Negligible
Impact on Water Resources	O	Negative	Negligible	Negligible
Impact on Biodiversity (Overall)	C	Negative	Moderate	Minor
Impact on Biodiversity (Overall)	O	Negative	Moderate	Minor
Social				
Impacts on Local Economy and Livelihood by Workforce mobilisation and Presence.	C	Positive		

Impact Description	Phase*	Impact nature	Significance of Impact	Residual Impact
Impacts on Local Economy and Livelihood by Other Construction Activities	C	Negative	Moderate	Minor
Impacts on Local Economy and Livelihood	O	Positive		
Impact on Traffic and Transportation	C	Negative	Moderate	Minor
Impact on Land Use	C	Negative	Negligible	Negligible
Impacts on Infrastructure/Public Services	C	Negative	Negligible	Negligible
Impacts on Occupational Health And Safety	C	Negative	Negligible to Minor	Negligible
Impacts on Occupational Health and Safety	O	Negative	Negligible	Negligible
Impacts on Community, Health, Safety and Security	C	Negative	Minor to Moderate	Negligible
Impacts on Community, Health, Safety and Security	O	Negative	Minor	Negligible
Impacts on Cultural Heritage	C	Negative	Minor	Negligible
Impact on Shadow Flicker	O	Negative	Minor	Minor
Unplanned Events				
Leakage and Spill Incident	C,O	Negative	Negligible	Negligible
Equipment Failure	O	Negative	Negligible	Negligible
Fire and Explosion	C,O	Negative	Negligible	Negligible
Blade Throw	O	Negative	Negligible	Negligible
Transmission Line Snapping and Transmission Pylon Collapse	O	Negative	Negligible	Negligible
Vehicle Collision	C,O	Negative	Minor	Negligible

*C = Construction Phase; O = Operation Phase

0.7SUMMARY OF CUMULATIVE IMPACT ASSESSMENT (CIA)

Based upon a review of existing projects and potential developments, it is concluded that cumulative impacts associated with projects that occur near the Project site will likely be experienced during the construction and operation phases of the Project.

- Cumulative birds and bats collision;
- Barrier creation for terrestrial mammals; and
- Economy and employment.

No additional mitigation measures are suggested to mitigate cumulative impacts as they are evaluated as minor, nevertheless it is recommended to:

- Maintain communication with the other project owners; and
- Consider presence of other key projects in the Project's monitoring program.

0.8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

Through a systematic assessment, the ESIA has identified a number of environmental and social risks and impacts, which may potentially result from the construction and operation phases of the Project. In order to manage and mitigate these impacts, a range of measures have been developed to eliminate or reduce the adverse environmental and social impacts to acceptable levels and as low as reasonably practicable. These mitigation measures and the actions needed for implementation of these measures are presented in Environmental and Social Management Plan (ESMP) (Chapter 11). Monitoring will be required for the Project to ensure compliance. This will include regular auditing of the Project during construction and operation as detailed in ***Section 11.8***.

NZE will provide the ESMPs to each Project's contractor and/or sub-contractor in order to ensure that they comply with the ESMP actions during the work activities during the construction phase. The ESMP will be translated into Mongolian, if needed, and made available at the Project Site. NZE will implement a contractor and/or E&S management mechanism to ensure the ESMPs' compliance and to monitor their Environmental and Social (E&S) performance under the Project ESMS.

1. INTRODUCTION

Net Zero Energy LLC (NZE) proposes to develop a 180 MW onshore wind farm (the "Project") in Tsogttsetsii Soum, Umnugobi Province, Mongolia (the "Site"). It is understood that NZE has named the Project as the 'Bilgeh wind farm'.

ERM-Hong Kong, Limited (ERM) have been commissioned by NZE to prepare the international Environmental and Social Impact Assessment (ESIA) for the Project with respect to meeting lender's commitment to International Finance Corporation (IFC) Performance Standards (PS) and other applicable standards and guidelines. This document is the ESIA Report for the assignment.

1.1 PURPOSE OF THIS REPORT

The purpose of this report is to discuss and present the findings of the ESIA of the 180 MW onshore wind farm (the "Project" or "Bilgeh wind farm).

Where applicable, mitigation, or enhancement measures have been designed to avoid, minimize/reduce, and compensate/offset negative impacts to the environment and/or people.

1.2 PROJECT BACKGROUND

Net Zero Energy LLC is a subsidiary of MCS and URECA. Established in 1993, MCS is one of the largest business conglomerates in Mongolia. The existing main businesses of MCS are in telecoms, fast moving consumer goods (FMCG), and real estate. MCS is currently expanding their business into digital, banking, agriculture, and renewables. MCS has also been an engineering, procurement and contracting (EPC) service provider for multiple renewable energy Projects in Mongolia in the past. MCS has experience in the renewable energy sector, having participated in the development of hydropower plants, four solar power plants with a total capacity of 45 MW, and the construction of the Tsetsii and Sainshand wind farms.

MCS has created a special purpose vehicle (SPV), Net Zero Energy LLC, as the Project implementing entity. Net Zero Energy LLC is a joint venture between MCS Mongolia and URECA Mongolia. URECA is a climate technology provider company and provides Decarbonization as a Service (DaaS) for corporates including digital MRV (monitoring, verification and verification) technologies to measure and implement high quality carbon projects with a focus on Asia.

The strategic objective set forth within the State Policy on energy of Mongolia or Mongolia's long-term development policy "Vision 2050" is to contribute to increase the share of renewable energy in energy production up to 20% in 2020 to 30% in 2030, reduce greenhouse gas (GHG) emissions increasing environmentally clean energy sources, decrease imported energy, become involved in activities to meet the gradually increasing energy demand of Mongolia, and to increase the share of clean energy supply to mines and industries that are being established in the southern region. In consideration of the above, NZE is developing the Bilgeh Wind Farm and taking advantage of Mongolia's abundant renewable energy resources to contribute to the national energy policy targets.

The Bilgeh Wind Farm will be the largest in the country and will be fully consistent with Mongolia's long-term development policy "Vision 2050" and the "New Revival Policy" specifically the "Energy Revival" sub-policy.

1.2.1 PROJECT PROPONENT INFORMATION

NZE was established in April 2024. The company has conducted the following for the Bilgeh Wind Farm:

- Completed the Feasibility Study Report in 2024;
- Submitted a Detailed Environmental Impact Assessment (DEIA) prepared by [redacted] (a licensed Mongolian consultancy firm also referred as the "the local EIA consultant")[1] in August 2025; and
- Completion of approvals of the DEIA are expected in Q4 2026.

TABLE 1-1: PROJECT PROPONENT SUMMARY

Project Proponent	**Net Zero Energy LLC**
State Registration number	7013305
Company Address	Shangri-La Office, 8th Floor, Olympics Street 10A, 1 Section, Sukhbaatar District, Ulanbaatar 14241, Mongolia
CEO	[redacted]
Contact details	Tel: [redacted]

NZE is planning to install up to 29 [redacted] WTGs with 6.25 MW each, 110 m hub height, comprising a total capacity up to 180 MW. [redacted]. The Project also includes a Battery Energy Storage System capacity of 50 MW and 100 MWh with battery cell technology [redacted][3].

1.2.2 PROJECT COMPONENTS

The key project components, as illustrated in ***Figure 1-1*** are:

- 29 Wind Turbine Generators (WTG);
- Substation consisting of 2x120 MVA power transformers located near the WTG area and the substation will be equipped with a Control Room;
- A Battery Energy Storage System of 50 MW and 100 MWh (BESS).
- A ~65 km double-circuit 220 kV overhead transmission line (OHL) connecting in a southeast direction from the Wind Farm Site to the Oyu Tolgoi Mine's central substation (Option 1) or Zes Oyu 220 kV switching station (Option 2);
- An ~30.9 km improved/unpaved road connecting the existing heavy duty coal transport Road to the WTG Area;
- About ~56 km of internal roads within the WTG Area connecting the different facilities;
- An OHL Access Road of total length about 62.2 km which will support construction and operation of OHL;
- Storage areas for material required to construct and operate the Project; and

[1] ERM's scope of work for this ESIA assignment did not include preparation of, nor any input to the DEIA.
[2] [redacted]
[3] [redacted]

- Stockpile areas.

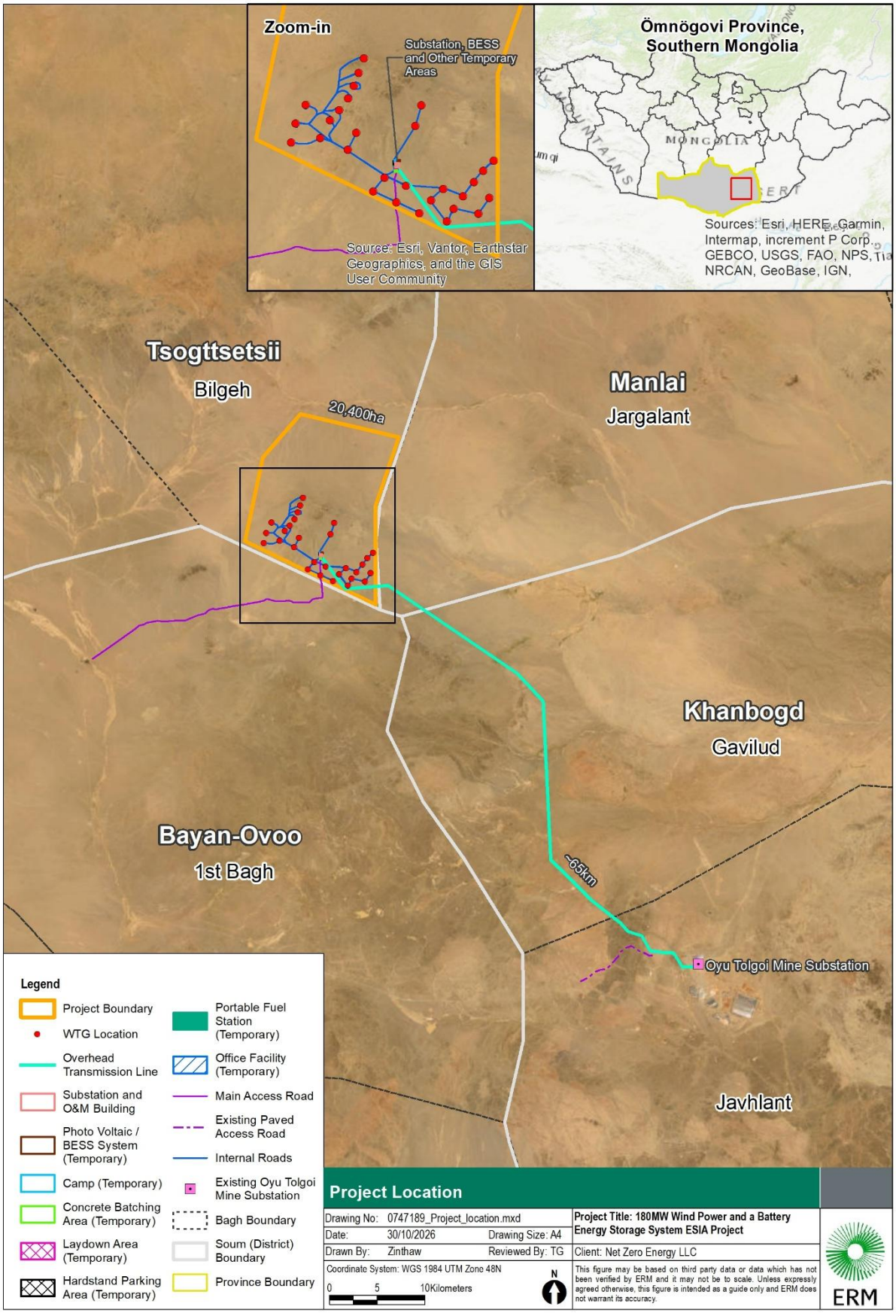


FIGURE 1-1: KEY PROJECT COMPONENTS

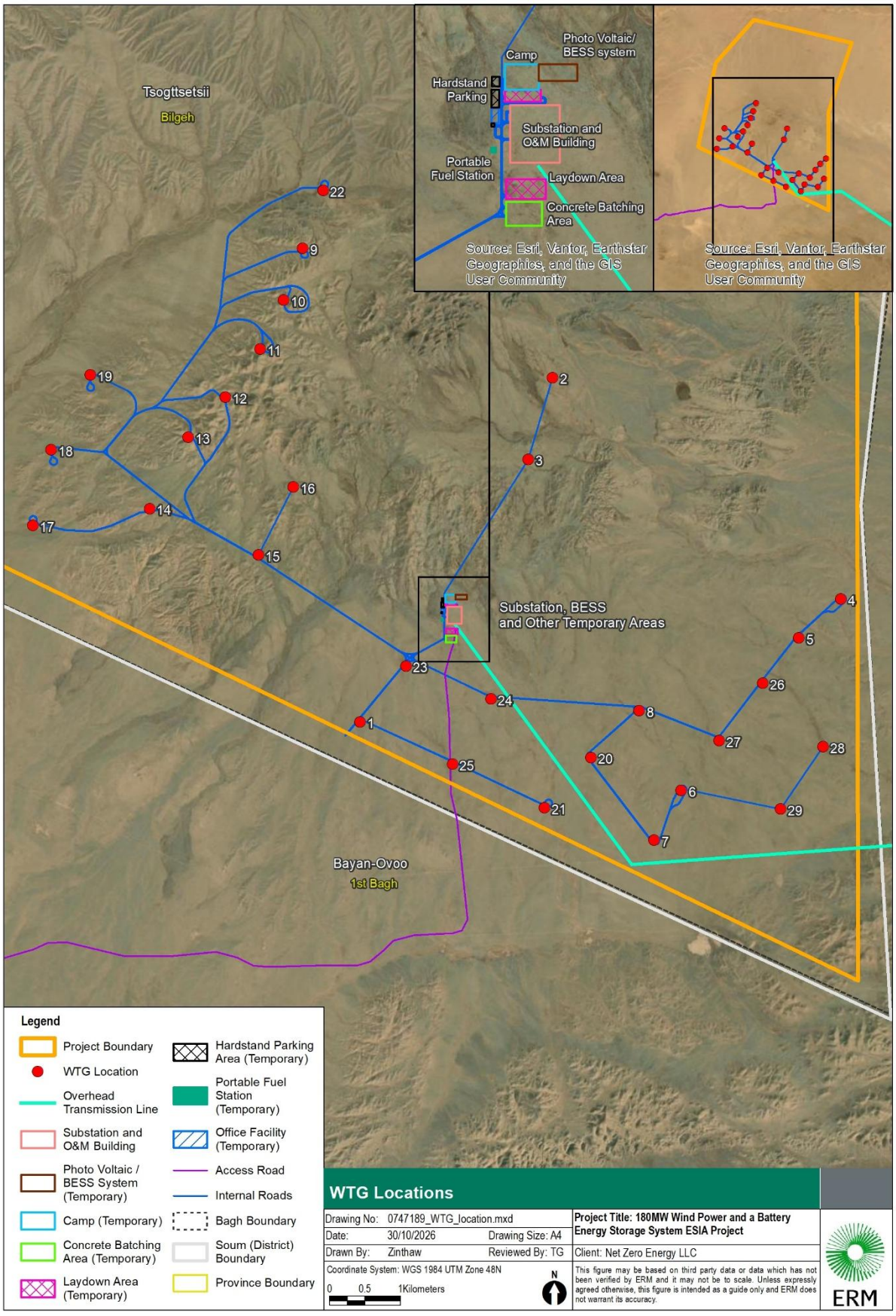


FIGURE 1-2: KEY PROJECT COMPONENTS (ZOOM-IN)

1.3 ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT OBJECTIVE

The objective of the ESIA is to assess the potential impacts of the Project activities on the environment (including biological, physical, and socio-economic resources), and where applicable, to design mitigation or enhancement measures to avoid, reduce, or remediate negative impacts to the environment or people to support the application for project financing from international lenders.

1.4 STRUCTURE OF THE ESIA

The structure and contents of the ESIA are as follows.

TABLE 1-2: STRUCTURE OF THE ESIA

Chapter	Chapter Title
0	Executive Summary
1	Introduction
2	Policy, Legal & Administrative Framework
3	Project Description
4	Impact Assessment Methodology
5	ESIA Screening and Scoping
6	Environmental and Social Baseline
7	Environmental Impact Assessment
8	Social Impact Assessment
9	Unplanned Events Impact Assessment
10	Cumulative Impact Assessment
11	Environmental and Social Management and Monitoring Plan
12	Stakeholder Engagement
-	Annex A: List of Species Recorded
-	Annex B: Critical Habitat Assessment
-	Annex C: Shadow Flicker Modelling Detailed Results from WindPRO
-	Annex D: ESIA Site Visit Meeting Notes and Photos
-	Annex E: Household Information and Survey Report
-	Annex F: Construction Biodiversity Management Plan
-	Annex G: Framework Biodiversity Action Plan
-	Annex H: Framework Livelihood Restoration Plan
-	Annex I: Future Stakeholder Engagement Log
-	Annex J: ESIA Disclosure Summary Report

1.5 LIMITATIONS

1.5.1 SCOPE OF ACTIVITIES

This Report is based on desktop studies, data and information obtained from NZE at the time of writing (October 2026), as well as field studies and engagement activities conducted by ERM. Any changes to, or additional relevant information regarding, the Project design, equipment and service procurement may affect the analysis, assessment and conclusions contained in this report.

This report is based upon the application of scientific principles and professional judgment to certain facts with resultant subjective interpretations. Professional judgments expressed herein are based on the currently available facts within the limits of the existing data, scope of work, budget, and schedule.

To the extent that more definitive conclusions are desired by NZE than those warranted by the currently available facts, it is specifically ERM's intent that the conclusions stated herein are intended as guidance and not necessarily as a firm course of action, except where explicitly stated as such. ERM makes no warranties, expressed or implied, including, without limitation, warranties as to merchantability or fitness for a particular purpose.

In addition, the information provided in this report is not to be constructed as legal advice.

1.5.2 LIMITATIONS OF USE OF THIS REPORT

ERM is not engaged in environmental assessment and reporting for the purposes of advertising, sales promotion, or endorsement of any client's interests, including raising investment capital, recommending investment decisions, or other publicity purposes. NZE acknowledges that this report has been prepared for the exclusive use of NZE and agrees that ERM reports, or correspondence will not be used or reproduced, in full or in a part, for any other purpose than to demonstrate that NZE has conducted an ESIA for the Project and may not be used or relied upon in any prospectus of offering circular. NZE also agrees that none of its advertising, sales promotion, or other publicity matter containing information obtained from this report will mention or imply the name of ERM. Nothing contained in this report shall be construed as a warranty or affirmation by ERM that the Project described in the report is suitable collateral for any loan by any lender through foreclosure proceedings or otherwise will not expose the lender to potential environmental and/or social liability.

ERM HAS OVER 140 OFFICES ACROSS THE FOLLOWING COUNTRIES AND TERRITORIES WORLDWIDE

Argentina
Australia
Belgium
Brazil
Canada
China
Colombia
Denmark
France
Germany
Hong Kong S.A.R, China
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
Netherlands
New Zealand
Panama
Peru
Poland
Portugal
Romania
Singapore
South Africa
South Korea
Spain
Switzerland
Taiwan
Thailand
UAE
UK
US
Vietnam

ERM-Hong Kong, Limited

2507 One Harbourfront
18 Tak Fung Street
Hong Kong
T: +852 2271 3000
F: +852 3015 8052

www.erm.com