



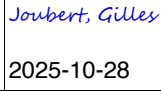
Badrakh Energy LLC / Zuuvch-Ovoo Uranium Project
H376512

Standard Technical Specification
Site Climatic Conditions

Standard Technical Specification

Site Climatic Conditions

H376512-8000-200-242-0001

						
2025-10-25	0	Approved for Use	L. Gresse	W. Mohammed	E. Tukker	G. Joubert
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Revision History

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2025-10-25	0	Approved for Use Updated client comments)	L. Gresse
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1. General

This document provides the basic geographic, climatic and relevant information to be used for the design of all facilities associated with the Zuuvch-Ovoo Uranium Project to be constructed on a green-fields site in Mongolia, Gobi dessert.

2. Location

The Zuuvch Ovoo uranium deposits are located in the Aimag (province) of Dornogobi in Mongolia, approximately 530 km south-east of the city of Ulaanbaatar. The Project is located approximately 90 km south-west of the Aimag capital Sainshand, 50 km southwest of Zuunbayan bag and 90 km northeast of Ulaanbadrakh sum. Currently the Project is accessible by a paved road (asphalt) from Sainshand to Zuunbayan then by a mix of paved and dirt road from Zuunbayan. The recently constructed Donshein paved road extends from Zuunbayan to approximately 15 km north of the Zuuvch Ovoo deposit. Zuunbayan is also the closest railway terminal.



Figure 2-1: Site Location

3. References

1. Mongolian Standard; Climatic and geophysical parameters for construction CCM-23-01-09.
2. ASHRAE Handbook 2021.

3. ZUUVCH OVOO Design Criteria Reference: IDF-DT-01020 1st Issue 25 June 2024.
4. Process Coordination Note 00245-0000-CN-0007-0001 Revision A 31 March 2023.
5. Review report on Basic design criteria E373996-8000-100-066-0001, Rev. A 18 March 2025.
6. Z.O. general layout design criteria, IDF-DT-010409, Rev. 01 dated 02/08/2024
7. Axionable X Orano – Climate Exposure for Prospective Sites Report

4. Site Conditions

4.1 Topography and Altitude

The terrain mostly consists of a flat steppe with knolls and small hills.

The site is located 708 m to 870 m above sea level.

4.2 Meteorological Data

Collected data at camp from 2007 to 2016 shows a continental climate characterised by cold and long winters, short hot summers, and short transitional seasons.

4.3 Air Temperature

4.3.1 *Monthly Data* ²

The monthly average dry bulb temperatures are tabled below.

Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.3	-16.9	-11.4	-1.8	7.8	15.1	21.5	24.6	22.3	15.7	6	-5.9	-14.5

4.3.2 *Equipment Design Temperatures* ¹

The design calculation temperatures are taken from Table 8 'A' and 'B' of CCM 23-01-09 for Sainshand which is in the same climatic zone as Zuuvch-Ovoo.

- Maximum design temperature of +27.3°C
- Minimum design temperature of -29.2°C.

4.3.3 *Extreme Weather Conditions* ¹

The plant design must be able to operate safely in extreme temperatures according to Table 8 'C' CCM 23-01-09 for Sainshand which is in the same climatic zone as Zuuvch-Ovoo.

- Extreme maximum temperature of +40.7°C
- Extreme minimum temperature of -41.4°C.

4.4 Rainfall Data

4.4.1 Monthly Precipitation ²

	Annual	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
Prec Ave	110	1	1	2	2	8	18	30	28	11	4	2
Prec Max	229	6	11	11	15	32	74	136	104	40	26	14
Prec Min	64	0	0	0	0	0	0	0	2	0	0	0
Prec Std	42	1	2	3	3	7	16	23	22	10	6	3

In accordance with climate change modelling, a mean annual precipitation of 127 mm will be used for design. The modelling indicated that annual precipitation would increase to 142 mm to 150 mm by 2050.

4.4.2 Stormwater Design ⁷

The elements used to convey the stormwater runoff shall be designed to allow for a 1-in-50-year critical storm event. Climate change scenario “SSP5-8.5 (4.4 °C)” will be used to factor the rainfall depth associated with this return period.

4.5 Snow

There is little snow in the winter, and the snow cover is little in slopes, crevices, and valleys of mountains. The thickness of the snow cover does not exceed 10 mm to 50 mm.

Snowfall in the Dornogovi region ranges from 14 days to 23 days.

4.5.1 Structures Snow Load Design

- Maximum of 50 mm snow loads.
- Snow load shall be at least 30 kg/m² according to Mongolian code BNbD 23-01-09 (p.126, Figure 30)
- and for 50 mm thick snow with density of 400 kg/m³, the snow load shall be 20 kg/m².

4.6 Humidity

The following relative humidity is extracted from the weather and climate website and is based on data from January 2010 to December 2020 on the Sainshand area:

	Humidity
Minimum annual average relative humidity	26.41%
Annual average relative humidity	44.37%
Maximum annual average relative humidity	72.73%

4.7 Wind ³

The wind blows from west and north-west in all seasons of the year with an average speed of 5 m/s to 12 m/s.

The monthly fluctuation of the wind occurs in April, May, September, and early June, when strong winds and sandstorms occur sometimes. The wind speed reaches 35 m/s, causing hardship on people and livestock.

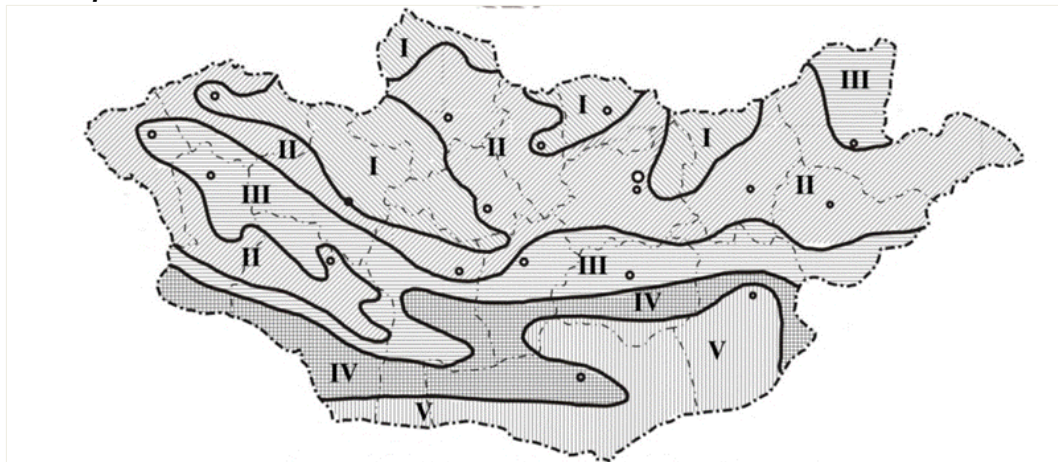
The wind becomes relatively calm from late June to September with a 4 m/s to 9 m/s speed.

4.7.1 Wind Direction

Dominant wind as measured in the Sainshand weather station are tabled below ⁶:

	North	North East	East	South East	South	South West	West	North West
I-month	15.6	2.7	0.8	3.4	11.4	4.1	10.2	51.9
IV-month	16.3	8.8	3.2	2.5	6.4	13.3	16.8	32.6
VII-month	19.5	16.3	6.9	5.8	11.9	11.2	9	19.3
Annual	14.5	10.4	3.6	4.7	9.5	7.9	11.8	37.7

4.7.2 Wind Speed ¹



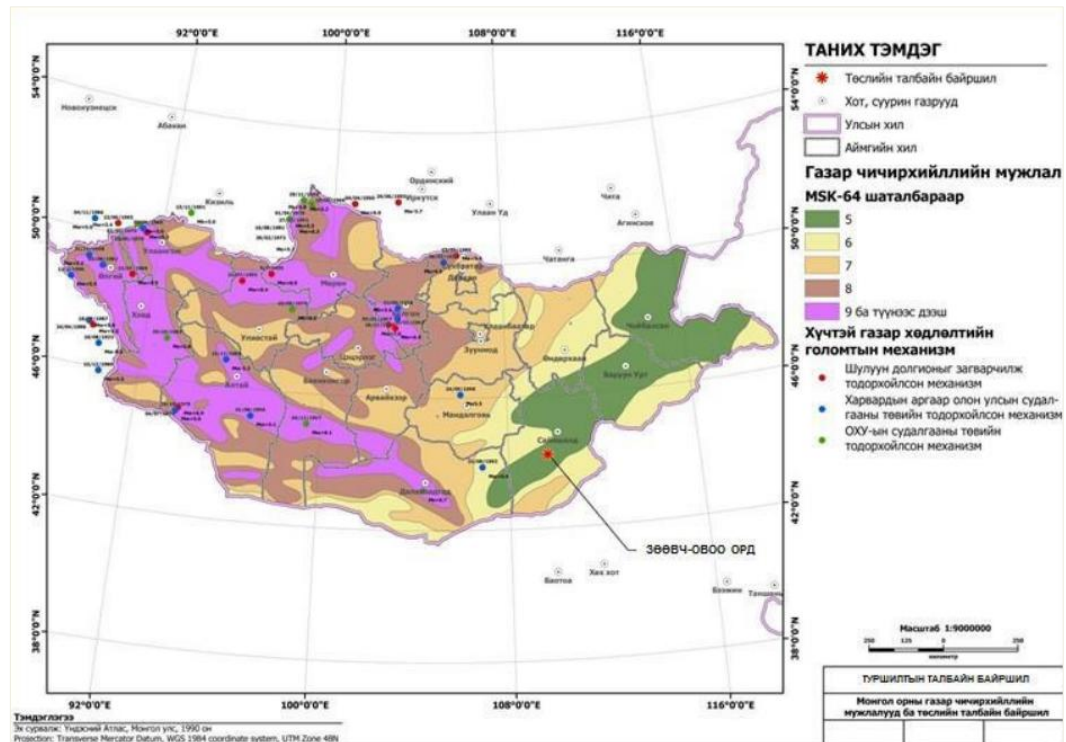
Wind Pressure (Load) Zones of Mongolia					
Maximum Wind Pressure q(gh/m ²)	I	II	III	IV	V
Once in 5 years	23	33	42	47	55
Once in 10 years	25	34	44	58	61
Once in 20 years	33	42	55	70	77

4.7.3 Structures Wind Load Design ¹

Maximum wind load of 77 gH/m².

4.8 Seismicity

According to the seismic zoning map of Mongolia, the Project area is located in Zone 5 (out of 9), corresponding to the lowest seismic hazard zone, relative to the rest of Mongolia. General earthquake zones in Mongolia are shown in picture below.



4.8.1 Structures Seismic Design

The territory of Dorngobi aimag belongs to the region of 5-magnitude earthquake zone and the Zuuvch-Ovoo Uranium Project site is located in this region.