EXECUTIVE SUMMARY & OVERALL RISK VERDICT

SITE UNDER ANALYSIS

Location hidden for privacy

Project: Solar Development

Coordinates: Coordinates hidden for privacy

Generated: 14 Nov 2026, 10:32 am

Data: Open-Meteo ERA5 · USGS · Open-Elevation · OpenStreetMap/Nominatim | Standard: Bureau of Indian Standards (BIS)



ALGORITHMIC RISK ASSESSMENT:

Statistical probability from public datasets (Open-Meteo, USGS, Open-Elevation) - not field-verified measurements.

QUICK RISK INSIGHTS

FLOOD / HEAVY-RAIN RISK

MEDIUM

80mm+ rain in 5 of 10 years

7 days over 80mm / 10 yrs

SEISMIC ZONE

Zone II

IS 1893:2016 (regional approx.)

Low Risk

ELEVATION ASL

103.1m

Slope: 0.7°

Terrain: Flat

OVERALL RISK VERDICT

Low Risk Indicators in the Public Data Used

Analysis indicates lower risk probability. Risk Score: 30/100. Standard construction following the locally applicable building regulations is recommended.

KEY RISK INDICATOR TILES - PUBLIC-DATASET DERIVED

FLOOD / HEAVY RAIN

MEDIUM RISK

7 days over 80mm / 10yr

Annual avg: 1254mm

ERA5 rain-day screen - not a flood model

ELEVATION & SLOPE

103.1m ASL

Slope: 0.7°

SRTM-based DEM

Open-Elevation (SRTM)

SEISMIC RISK ZONE

Zone II

IS 1893:2016 (regional approx.)

Low Risk

BIS IS 1893 / USGS

SOIL & MOISTURE

Mixed

Rain-moisture index: 0.42

Moderate rainfall

Regional class + ERA5 rainfall

SAMPLE REPORT

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KEY HAZARDS AT A GLANCE

Flood / heavy-rain indicator	MEDIUM (80mm+ rain in 5 of 10 years; 7 such days in 10 years)
Average annual rainfall	1254 mm
Seismic hazard	Zone II (0 earthquakes of M3+ within 100 km in 10 years; max none detected)
Elevation / slope	103.1 m / 0.7°
Overall risk score	30 / 100 (LOW)

LARGEST EARTHQUAKES (USGS, LAST 10 YEARS, WITHIN 100 KM)

No earthquakes of magnitude 3 or higher were recorded within 100 km in the last 10 years.

SITE CONDITIONS

HEAT STRESS

MODERATE

Avg max 33.5°C, peak 43.6°C. Warm climate - allow for module temperature derating; take concrete-curing precautions in hot spells.

COLD STRESS

LOW

Coldest recorded 15.2°C (avg min 23.8°C). No extreme-cold indicators in the 10-year record.

DATA AVAILABILITY	90%	All primary data sources responded. This shows data availability only, not accuracy; outputs remain statistical estimates.

SAMPLE REPORT

SITE: · PROJECT: SOLAR · RISK SCORE: 30/100 · DATE: 14 November 2026

ENGINEERING RECOMMENDATIONS

1. Mounting & Foundations

Mount racking at least 1.0-1.5 m above expected water level and anchor into piles rather than surface mounts.

2. Electrical Safety

Inverters, combiner boxes and junctions must sit above the maximum expected flood level with watertight conduits.

3. Seismic & Wind Loads

Design to IS 1893:2016 Zone II with ductile detailing per IS 13920. Run wind and seismic load checks on the racking before installation.

PRE-CONSTRUCTION PROFESSIONAL CONSULTATION CHECKLIST

- [ ] Licensed Geotechnical Engineer - soil investigation and bearing capacity
- [ ] Structural Engineer - foundation and seismic design per IS 1893 / IS 13920
- [ ] District Land Records Office - title verification, encumbrance certificate
- [ ] Flood NOC / hazard status from District Disaster Management Authority (DDMA)

DATA SOURCES, ATTRIBUTION & LEGAL DISCLAIMER

DATA SOURCES: Weather data by Open-Meteo.com (CC BY 4.0), based on Copernicus ERA5 reanalysis (open-meteo.com). Elevation - SRTM-based DEM via Open-Elevation (SRTM). Earthquake - USGS FDSNWS API. Seismic level - BIS IS 1893 (Part 1):2016 regional approximation, cross-checked with USGS history. Geocoding - (c) OpenStreetMap contributors / Nominatim (ODbL).

LIMITATION OF LIABILITY: This report uses publicly available data. If any data is found inaccurate, the developer (Thoiba Trader / Geo Prithvi Report) bears no responsibility, as all data is sourced from third-party public data services (Open-Meteo, USGS, Open-Elevation, OpenStreetMap).

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All risk scores are statistical probabilities derived from public climate, earthquake and elevation datasets - not ground-truth field measurements. For legal land due diligence, consult: (1) District Land Records Office, (2) a Licensed Geotechnical Engineer, (3) a Legal Advocate specialising in property law.

For investment-grade decisions, commission a licensed geotechnical engineer and obtain India Meteorological Department (IMD) station data for 30+ year local rainfall analysis.

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