

ERTHOS

**Earth Mount Solar®
PV Technology
Assessment Summary**

White Paper

Earth Mount Solar® PV Technology Assessment Summary

DNV, a leading independent engineering firm, published an independent technology assessment report on the Earth Mount Solar® PV system on April 22, 2022. The report's key findings and observations are as follows:

System Benefits: Earth Mount Solar® PV systems are unique in the industry, with benefits that include reduced capital costs, the elimination of underground installation risks (no steel pile foundations), no complex moving parts (such as motors, gears, actuators, and dampeners), higher power density per area (with a ground cover ratio of more than 90%, yielding an average energy gain of 114% per acre), and a simplified installation process with proprietary laminated PV cable assemblies that eliminate DC wire pulls, field terminations of MC4 connectors, cable ties, field labeling, and wire-management tasks.

Lower LCOE: The elimination of steel pile foundations and steel support structures, combined with the use of patented laminated PV cable assemblies, simplifies installation and reduces the cost of materials and labor. At the same time, higher energy density allows for increased energy output per unit of land. Combined, these factors result in expected LCOE that is lower than that of typical utility-scale mounting systems.

Validation of PVSYST Energy Modeling: DNV evaluated Earth Mount Solar® PV operating data from the Bear Mountain project site in Bakersfield, CA for a period of six months. Analysis of this data showed that the modeling assumptions Erthos used within PVSyst resulted in energy production estimates that fell well within the typical uncertainty range of standard energy predictions.

Industry-Leading Wind Ratings: Based on static wind-loading and aeroelastic wind tunnel tests conducted by leading wind engineering firm CPP, the Earth Mount Solar® PV system was found to be extremely aerodynamic, with a top wind rating of 194 mph — the maximum rating achievable by CPP's wind tunnel.

Heat Transfer Coefficient Confirmed: The effective heat transfer coefficients observed over six months at the Erthos Bear Mountain project site ranged seasonally from around 15 W/m²K to around 23 W/m²K. Based on the six-month Bear Mountain dataset, DNV recommended using an overall heat transfer coefficient value of 18.5 W/m²K for PVsyst modeling. In determining this value, the report notes that the ground provides a heat-sink effect, and that cell temperature is dependent on soil temperature in addition to ambient air.

Reduced Geothermal Scope: The scope of the geotechnical investigation required for Earth Mount Solar® PV systems is considerably reduced compared to typical solar installations. This is due to the smaller footprint of Earth Mount Solar® PV and to the fact that pile load testing and below-ground corrosion testing are not required.

US Codes & Standards Compliance: Erthos has completed UL 2703 testing for ET Solar and ZnShine PV modules (with others pending) and has certified its proprietary laminated PV cable assemblies to UL 9703 for several industry-standard PV connectors. Structural drawings, structural analysis, and wind tunnel reports were found to be consistent with standard industry practices and in compliance with the requirements of the International Building Code and ASCE 7.

Intellectual Property Secured: Erthos has been granted a patent on earth-mounted solar installations and has subsequently submitted more than 20 related patent applications covering potential commercial variations of the patented technology and related design concepts. Erthos also has various international patents pending. Erthos currently licenses its patents to its ErthCompatible module manufacturing partners, including ET Solar, GCL, Yingli Solar, ZNShine, and HT-SAAE.

Highly Qualified Executive Team: The Erthos senior management team was found to possess the experience and leadership qualities necessary for the growth of the business and the continuous improvement of the company's services and technology.

Funded For Growth: Erthos has raised \$24.9 million in Series A and B financing.

If you would like to access the full DNV report, please contact your Erthos Sales representative, or click on the "Request Full Report" link below to contact the Erthos Sales Department.

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