GROUND-MOUNT SOLAR

CPP WIND ENGINEERING CONSULTANTS

Understanding wind risks for ground-mounted PV arrays

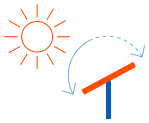
Wind loads are a critical part of PV racking system design, affecting risk and cost. CPP Wind set the standard for solar wind load advice.

Whether you are designing a new utility-scale solar farm, or are wondering about the variety of designs available, CPP Wind can help you understand the risks of wind damage of a given design and a particular site. This performance-based design approach delivers the best possible system.

WIND TUNNEL TESTS UNDERPIN CALCULATIONS

Panel size, ground coverage ratio, natural frequency, tilt, ground clearance, support structure, topography, and pier spacing all impact wind loads. CPP wind tunnel tests capture all of these and more. It is also important to consider companion loads. CPP loading snapshots make this easy.

CATCHING THE RAYS WITHOUT THE RISK



Single-axis trackers present a special set of challenges. Should they be stowed flat, at high tilt, or a mix of the two? When should they stow? How might dampers help? Aeroelastic studies, where the models move in response to wind forces and in turn change the wind forces, provide reliable answers. The best aeroelastic studies include multiple rows of full trackers.

FINDING YOUR PLACE IN THE SUN

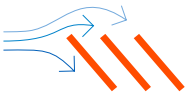
Site specific studies improve solar farm design (and even site selection) by taking account of the wind loading effects of hills and forests, as well as the risks of thunderstorms and hurricanes. Our multi-sector analysis combines wind tunnel testing with extreme wind analysis to provide the most accurate top-of-pile loads.

WHEN THE WORST HAPPENS, UNDERSTAND WHY

Learning and adapting from failures in the field is essential to understanding and improving the reliability of solar investments. As experienced forensic investigators of wind damage to solar racking, CPP can help identify the root cause and recommend mitigation moving forward.

3D aeroelastic studies predict wind-induced instability and help identify stowing procedures to prevent catastrophic damage.

DISCOVERING DYNAMIC LOADS



It's important to understand all the ways that dynamic loads (wind-induced vibration of racking systems) impact design. These vibrations can produce more displacement than the static loads, and the resulting inertial loading will be felt in everything from the piers to the module clips.

> Ask us about our cloud calculators that update static and dynamic wind loads as you modify your design.

Contact CPP Wind today to ensure that the effects of wind and airflow are incorporated in your design.

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